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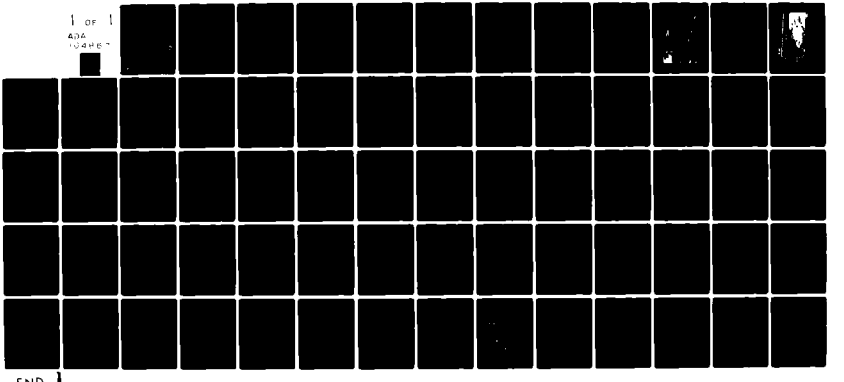

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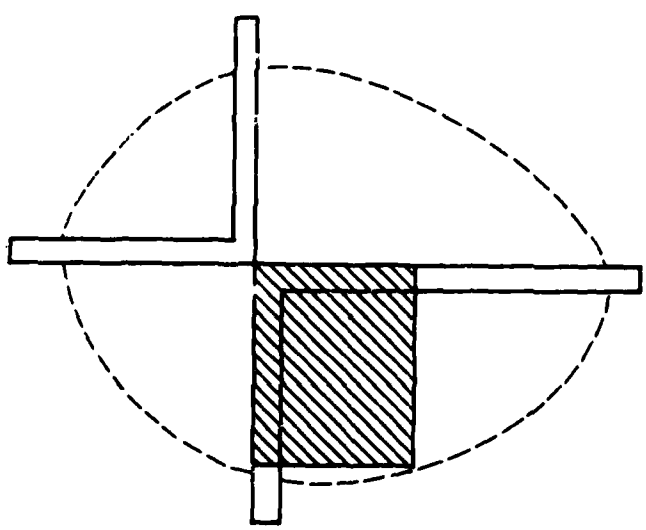
ARCHAEOLOGICAL SALVAGE OF THE JOSO TRESTLE CONSTRUCTION CAMP, 45-FR-51 LOWER MONUMENTAL PROJECT

by

Priscilla Wegars

and

Roderick Sprague



UNIVERSITY OF IDAHO ANTHROPOLOGICAL RESEARCH MANUSCRIPT SERIES, NO. 65

(6) ARCHAEOLOGICAL SALVAGE OF TH[illegible] TRESTLE CONSTRUCTION CAMP, [illegible] LOWER MONUMENTAL PROJECT,

by

(10) Priscilla Wegars

and

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(13)

Contract No. DACW68-81-C-0014 new
with the U.S. Army Corps of Engineers,
Walla Walla District

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UNIVERSITY OF IDAHO ANTHROPOLOGICAL RESEARCH MANUSCRIPT SERIES, NO. 65

Laboratory of Anthropology

University of Idaho

Moscow

(11) 1981

ABSTRACT

During October and November of 1980 a University of Idaho excavation team, under contract with the U.S. Army Corps of Engineers, Walla Walla District, conducted archaeological salvage operations at the Joso Bridge construction camp site (45-FR-51) on the Snake River in eastern Washington. A major Pacific Northwest transportation camp, the Joso Bridge site was occupied from about 1913 until completion of the trestle in 1914. A notable engineering feat of its time, Joso Bridge is even now in daily use by the Union Pacific Railroad. Salvage excavations were made necessary by proposed fish hatchery construction, which will obliterate the greater portion of the camp area. Interpretation of the site is complicated by the fact that the camp buildings were dismantled and removed following completion of the trestle; however, early photographs do exist and it has been possible to make some correlation with what little structural evidence remains below ground. Because the Northern Pacific's Perry Station section house was also located nearby, the opportunity exists to make comparisons between the consumption and disposal habits of a more settled section foreman with those of the itinerant ironworkers. Additionally, the artifact analysis has provided a great deal of specific information about the camp and its workers, especially their leisure-time activities, among which were drinking and poker-playing. While it was hoped that some evidence of the crew's ethnic makeup might emerge, a few sherds of Chinese ceramics were the only archaeological clues to the possible ethnic origin of perhaps one camp member, although documentary research has provided us with the name of an Irish workman. Surprisingly, women and children were also present at the site, probably as the family accompanying either one of the foremen, or the Perry Station section master, or both.

ACKNOWLEDGEMENTS

The Joso Bridge excavation team's 6 positions were filled by 17 people, including 1 volunteer, none of whom could work full-time. They worked ably, cheerfully, and enthusiastically in wind, rain, and snow; we are most grateful for their dedication. They are, in order of participation, Assistant Director Joseph P. Martin, photographer Gerald K. Landreth, and crew members Diana Rigg, Michael A. Pfeiffer, Mary Condon, Jon Horn, Julia Longenecker, Shannon O'Dell, Darby Stapp, Karl Gurcke, Russell Schauer, Jennie Davey, Missy Heitland, Richard Lee, Carl Ritchie, Edgar C. Bryan, and Patty Porterfield. Roderick Sprague was the Principal Investigator, and Priscilla Wegars was the Field Director.

Support in the field was provided by LeRoy Allen of the U.S. Army Corps of Engineers, Walla Walla District; Orval Green and staff of the Lyons Ferry State Park; and the staff of the Lyons Ferry Marina.

Personnel from the Laboratory of Anthropology, Moscow, who provided assistance before, during, and after excavation included Chris Fuhrman, Clair Worth, and Cathy Lubben. Diana Rigg coped with cramped and adverse conditions to finish the cataloging in record time. Department colleagues who loaned books and materials and helped with artifact identification were Caroline D. Carley, Timothy W. Jones, Edgar C. Bryan, and Michael A. Pfeiffer; others, too numerous to mention, attended artifact identification sessions, and we are grateful for their interest and participation.

A number of students did special projects on Joso, either for credit or as volunteers. They included Jon Horn, Joseph P. Martin, Gerald K. Landreth, Mary Condon, John Myles, and Carl Ritchie. Julia Longenecker was responsible for the faunal analysis, and illustrations are by William Eckerle and Heidi Mead.

Preliminary research was aided by many individuals, not all of whom we can mention here. However, the following have been especially helpful: Ruth Turner, Starbuck; Wilma and Hallie Fletcher, Starbuck; Gladys Fletcher, Dayton; Robert Beal, Pomeroy; Louise B. Jaussaud, Walla Walla; Judith L. Young-Thayer, Walla Walla; Linda F. Sprague, Moscow; Walter A. Oberst, Editor, Franklin Flyer, Pasco; Lawrence L. Dodd, Archivist, Whitman College, Walla Walla; John E. Witherbee, Research Specialist, Union Pacific Railroad, Omaha; George Skorney, Public Relations, Union Pacific Railroad, Portland; W. A. McKenzie, Director, Information Services, Burlington Northern, St. Paul; Walter L. Romberg, Morrison-Knudsen Co., Boise; W. F. Seidel, President, Missouri Valley, Inc., Amarillo; E. L. Wilson, Manager-Labor Relations, Construction, American Bridge, Pittsburgh; Juel D. Drake, General Secretary, International Association of Bridge, Structural and Ornamental Iron Workers, New York; Edgar C. Bryan, a Past President, Iron Workers Local No. 14 (Spokane), Orofino; Jeanne M. Welch, formerly of the Office of Archaeology and Historic Preservation, Olympia; Gregory Cleveland and Randall F. Schalk, Laboratory of Anthropology, Washington State University, Pullman; and numerous clerks and engineers of Columbia, Franklin, Walla Walla, and Whitman counties.

We are grateful to the following persons and companies for aiding us in our more recent research: Ray Anderson, University of Idaho Inter-library Loan Librarian; Dan Walsh and staff, of the East Washingtonian, Pomeroy; Claire Saucier, Librarian, Dayton City Library; Lee Smith, Reporter, Dayton Chronicle; Walter J. Swanson, Advertising Manager, Marketing Department, Crescent Foods, Seattle; Terry Corrado Spyrison, Corrado Cutlery, Chicago; Jacqueline Stone, Assistant Curator, U.S. Tobacco Co. Museum, Greenwich, Connecticut; Greg Byrne, Conservator, Division of Museum Services, National Park Service, Harpers Ferry, West Virginia; D. C. Pinkley, Vice President, Operations, Pinkerton Tobacco Co., Owensboro, Kentucky; Mr. and Mrs. Jim Johnson, Connell; Frances A. Hare, Archivist, Yakima Valley Museum and Historical Association, Yakima; Mr. and Mrs. Charles M. Actor, Pasco; Martha Britney-Pratt, Librarian, Microfilm Department, Washington State University, Pullman; Tony Drake, Department of Anthropology, Washington State University, Pullman; and Maynard Fosberg and Anita Falen, Soil Science Department, University of Idaho.

A final sincere thanks goes to Colonel Henry J. Thayer, District Engineer, Walla Walla District, Corps of Engineers, Department of the Army, Walla Walla, Washington. It was only through the far-sighted vision of Jerry Thayer that this project was authorized and funded.

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BACKGROUND

Introduction

The U.S. Army Corps of Engineers, Walla Walla District, has proposed that a fish hatchery be constructed on the floodplain on the north side of the Snake River, downstream from its confluence with the Palouse. The Lyons Ferry Fish Hatchery is to be an extensive complex, comprising three raceways, several associated buildings, a visitor center, and eight staff residences. This proposed construction has necessitated investigations into the impact the project will have upon the archaeological resources, both prehistoric and historic, of the immediate area.

The surrounding countryside is particularly rich in aboriginal remains, and a number of excavations were carried out at sites in the vicinity in previous years. The most spectacular of these are probably Marmes Rockshelter, the Palus Village (45-FR-36), and the Palus burial site (45-FR-36B) adjacent to the village; these excavations have been briefly discussed elsewhere (Schalk 1980:50-60) so will not be included here.

During the early summer of 1980, excavators from Washington State University (WSU), under the direction of Randall Schalk and Gregory Cleveland, located a total of eight prehistoric house pits, mapped a number of historic features, and excavated some of both (Schalk 1980). The Washington State University contract was to provide data for the determination of eligibility for nomination to the National Register of Historic Places. For reasons which are still not clear, the Washington State Historic Preservation office declared the construction site not eligible before the report was completed. In spite of this declaration, the Walla Walla District, Corps of Engineers clearly saw its obligation to historic preservation and provided funds sufficient to enable a basic salvage of surface remains and selected features. The excavation methodology and the resultant information reflect this compromise between a research-oriented excavation and basic salvage.

From 24 October through 28 November 1980 an excavation team from the Laboratory of Anthropology, University of Idaho (Roderick Sprague, Principal Investigator; Priscilla Wegars, Field Director), under Contract No. DACW68-81-C-0014, engaged in archaeological surface collection, salvage excavation, and cataloging of the historic component. It is that work which is the subject of this report.

Joso Bridge

The historic features concerned are mainly related to "Trestle City" (45-FR-51), a construction camp site occupied from approximately 1913 to 1914 by workers engaged in erection of the Joso Bridge. Known by many

other names, particularly Joso Trestle and Snake River Viaduct (R. Sprague 1980:61), the bridge was begun as part of the Spokane-Ayer Cut-off by the North Coast Railroad, later part of the Oregon-Washington Railroad and Navigation Co., a subsidiary of Union Pacific (R. Sprague 1980:71). The cantilevered Joso Trestle was a marvel of engineering technology for its time, and, at 3920 ft. (*Railway Age Gazette* 1915:623-626), it is said to still be the third longest curved railroad trestle in the Western Hemisphere (*Dayton Chronicle* 1980:3). A brief description of the actual construction of the Joso Bridge can be found in Cleveland (1980:91-92).

"Trestle City"

Archaeological interest in "Trestle City" dates back to the 1950s when historic remains were first observed there. These were recorded, in 1964, by Roderick Sprague, and identified then as the camp for the work force participating in the construction of the Joso Trestle. Sprague located and interviewed a Mr. R. A. Fife, now deceased, who had been the timekeeper for the original project, and from him obtained several photographs showing both the trestle under construction and the layout of the construction camp itself. One of these latter pictures (Fig. 1) proved particularly important, for it shows actual buildings fulfilling a variety of functions. While Mr. Fife indicated that the two largest structures, Nos. 12 and 14, were the the bunkhouse and the mess hall, it was not known, before excavation, which was which. He also indicated that the building at the extreme right, No. 1, was his residence, and that the other houses in line with his, Nos. 3, 5, and 7, were occupied by the foremen, Fred Norlan and Bill Redman, and by the superintendent, Edward Baggs; although once again it is not known who had which house.

It is possible to speculate endlessly about the functions of the other buildings. The small square ones are of course outhouses. Other structures which one could expect to find on a construction camp site of this date might include a cookhouse, if separate from the mess hall, an outdoor oven, the cook's dwelling, a commissary, a laundry, a blacksmith shop, a washhouse, storerooms, a site office, and perhaps a stable. A recreation room was an innovative possibility, and although one railroad of the time was even considering installing "shower baths" in a construction camp (*Railway Age Gazette* 1913:1556), the proximity of the Joso camp to the Snake River would have rendered such a luxury unnecessary. Although no structural remains of any of these buildings are extant, we hoped, through salvage excavation techniques adapted especially for this site, to be able to identify the locations of these long-gone buildings, and to speculate more accurately about what activities might have taken place in and around them.

Perry Station

Also to be affected by fish hatchery construction is the last existing evidence of Perry Station, a Northern Pacific section house and associated complex of buildings.

Fig. 1. Soso Bridge Construction Co., ca. 1914, using same number sequence shown in location of some buildings as Cleveland (1981:4). Photo by R. A. Fife.

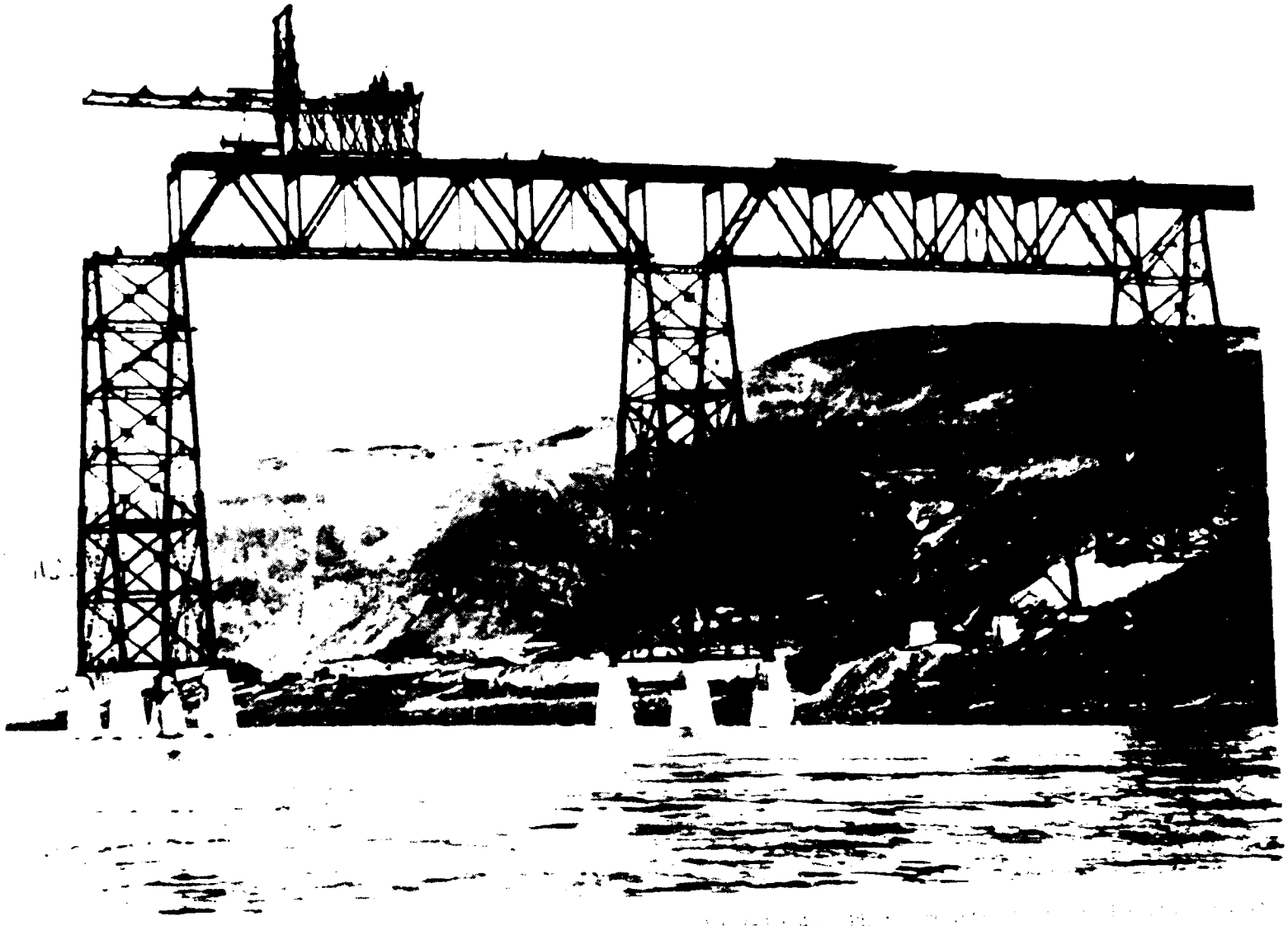
> A section gang, as every alert railroad passenger knew, was a group of men - muscular, sunburned, streaked with dirt and sweat - who stood along the railroad right-of-way, leaning on crowbars and mallets, and peered at you through the windows of the lounge car as the train slipped cautiously over a newly repaired stretch of track. . . . Why do section men always stand so dangerously close to the passing train? Answer: the breeze cools you off [Reinhardt 1970:209, 231].

A "section" was an area of track 3, 5, 8, or 10 mi. long (Adams 1889:421; Alexander 1889:156) presided over by a section foreman, also called a "section-master" or "section-boss." Under him was a crew of laborers ranging in number from 4 to 6, 6 to 12, or 5 to 25 (Clarke 1889:38; Alexander 1889:156; Adams 1889:421-422), most often "uneducated, unmarried, undemanding drifters" (Reinhardt 1970:218). The job of the section foreman and his crew was to keep the line in good repair which they did by travelling over it in a handcar, checking to see that the gravel ballast remained firmly in place, that drainage ditches were clear, that trees and telegraph poles had not fallen across the track, or wooden bridges burnt down (Clarke 1889:41).

Dwellings were erected in appropriate areas to house both the resident section master and his crew, which sometimes consisted of two gangs, each patrolling the track in an opposite direction.

In 1909 a section house was constructed at Perry near a portion of the Northern Pacific's Snake River branch, just downstream from what would later be the location of the Union Pacific's Joso Bridge. This building was "32 x 40 ft., of frame construction, and on a block and post foundation" (R. Sprague 1980:67). It is not clear what building this was since a 1913-1914 photograph of Joso Bridge under construction shows at least six structures in the Perry Station area (Fig. 2). It can probably be surmised, however, that the 1909 building was the depot itself, and that other buildings nearby included one or more dwellings for the section master and crew, a water tower, storage sheds for tools and equipment, and a blacksmith's shop. It is not known exactly how long this complex of buildings was in use, or even whether Perry Station functioned as a station at all, in addition to its section maintenance activities, but it is thought to have gone out of use before 1939, according to local informants. The track itself, abandoned in 1965, and the remains of the Perry Station buildings near it, were flooded in 1969 following completion of Lower Monumental Dam.

It may still be possible to locate the site of at least one Perry Station building which was on higher ground. Fig. 2 shows a two-story structure, perhaps the section foreman's dwelling, situated near the center of the photo. Cleveland (1980:110) suggests that this building "may have been a shop area associated with the station or Section House" and that one of the prehistoric house pits (HP-5) may have had a later historic structure within it. If so, it would almost certainly be one of the Perry Station buildings.



Besides being "neighbors" of the "Trestle City" dwellers, the Perry Station personnel also contributed materially to the eventual archaeological record. In attempting to locate dumps and other features left by the bridge crew, it would seem inevitable that Perry Station rubbish would also be recovered and one of our objectives was to learn if the two groups were using discrete dumping areas, or disposing of unwanted items in the same locations, at the same or different time periods.

Social Divisions

Besides the Perry Station employees and the Joso Bridge crew there is a third group of people resident at the site whose consumption and disposal habits must be taken into account. These people are the occupants of the houses along the river, and include the timekeeper, R. A. Fife; two foremen, Fred Norlan and Bill Redman, and the superintendent, Edward Baggs. Although these gentlemen would have enjoyed higher status and higher pay than the ordinary workmen, they may still have sat down to meals with them in a common mess hall, but at a "head table" (Edgar C. Bryan 1981:personal communication).

The area along the river where the supervisory personnel's residences were located was not our major focus of interest, since it does not lie within the area of the fish raceways. We did undertake some surface collection here, however, and excavated two features, F300/7 and F370/3.

Ethnic Groups

Another of our objectives was to learn what different ethnic groups may have been represented at Joso. One informant, Mrs. Louis Jaussaud of Walla Walla, who came to the area in 1921, reported that "Negroes" were said to have been used for diving; her husband had told her that they "lost one a day" (R. Sprague 1980:72). Informants have also suggested that Chinese may have been part of the work force. Newspapers dated 1910 and printed in Chinese were recovered in an excavation of nearby Squirt Cave in 1969 (Cleveland 1980:93), however Cleveland notes that "Chinese labor was used in menial tasks and would not have been used for the specialized tasks involved in trestle construction." Before excavation and documentary research we knew of no other specific ethnic group whose members were part of the Joso work force. No clue to ethnic origins is even provided by the names of those men whom we know were involved with the Joso Trestle, such as R. A. Fife, Fred Norlan, Bill Redman, and Edward Baggs.

PROJECT METHODS, TECHNIQUES, AND INTERPRETATIONS

Field Methods

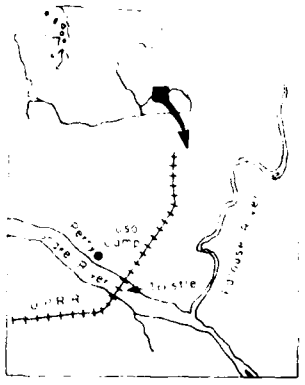
The University of Idaho excavation team established a campsite, dubbed "Camp Squalid," downstream from the trestle and just inside the fence on Corps of Engineers land. A converted school bus served as our field laboratory, we cooked on Coleman stoves, and slept in tents. Our first field task was to construct a base line, off of which to measure. Because WSU had already established such a baseline at 30 m intervals from west to east across the middle of the site (the 100N line), it was decided to adapt it to our own purposes to aid in relocating those historic features which they had plotted previously. Using this baseline as a guide, we laid out a system of grid squares having 10 m on a side. These grid squares began at the westernmost end of the baseline, designated "50E," and continued eastwards across the site to the "450E" line. Some 500 such grid squares were pegged out both north and south of this line, and, in addition, pegs were put in at 30 m intervals elsewhere in the fish raceway area to facilitate surface collection in locations having few features.

Each grid square was walked by a member of the excavation crew. Features, such as depressions, mounds, burned areas, trash scatters, and so on, were flagged, and isolated artifacts were collected and recorded. Artifacts associated with flagged features were not collected at that time. Following surface collection the flagged features were plotted on a general site plan. Over 200 such features were identified (Fig. 3). Of these some 89 were selected for further investigation and given a feature number.

For ease in locating such a large number of features on the plan, the individual feature numbers were based upon the east line of the grid square in which the feature fell. Thus, the feature located in grid square 100N/100E, one of the first to be identified, was given the number F100/1. Just south of it, in grid square 90N/100E, another feature was given the number F100/2. A feature located, for example, in grid square 130N/270E would have its number preceded by F270/, and so on. This system enabled any feature to be quickly and easily located, whether on the ground or on the plan. Those historic features which were found in and near the area of prehistoric house pits were photographed and surface-collected only; none were excavated or even "tested." The remaining features were located primarily within the area of the three raceways included in the plans for the proposed fish hatchery; construction of these raceways will effectively annihilate the vast majority of those features presently associated with "Trestle City."

Excavation Techniques

Once the major features had been identified it was necessary to decide how to proceed with excavation. Because our task was to salvage the maximum amount possible in five weeks with six crew members, we had to



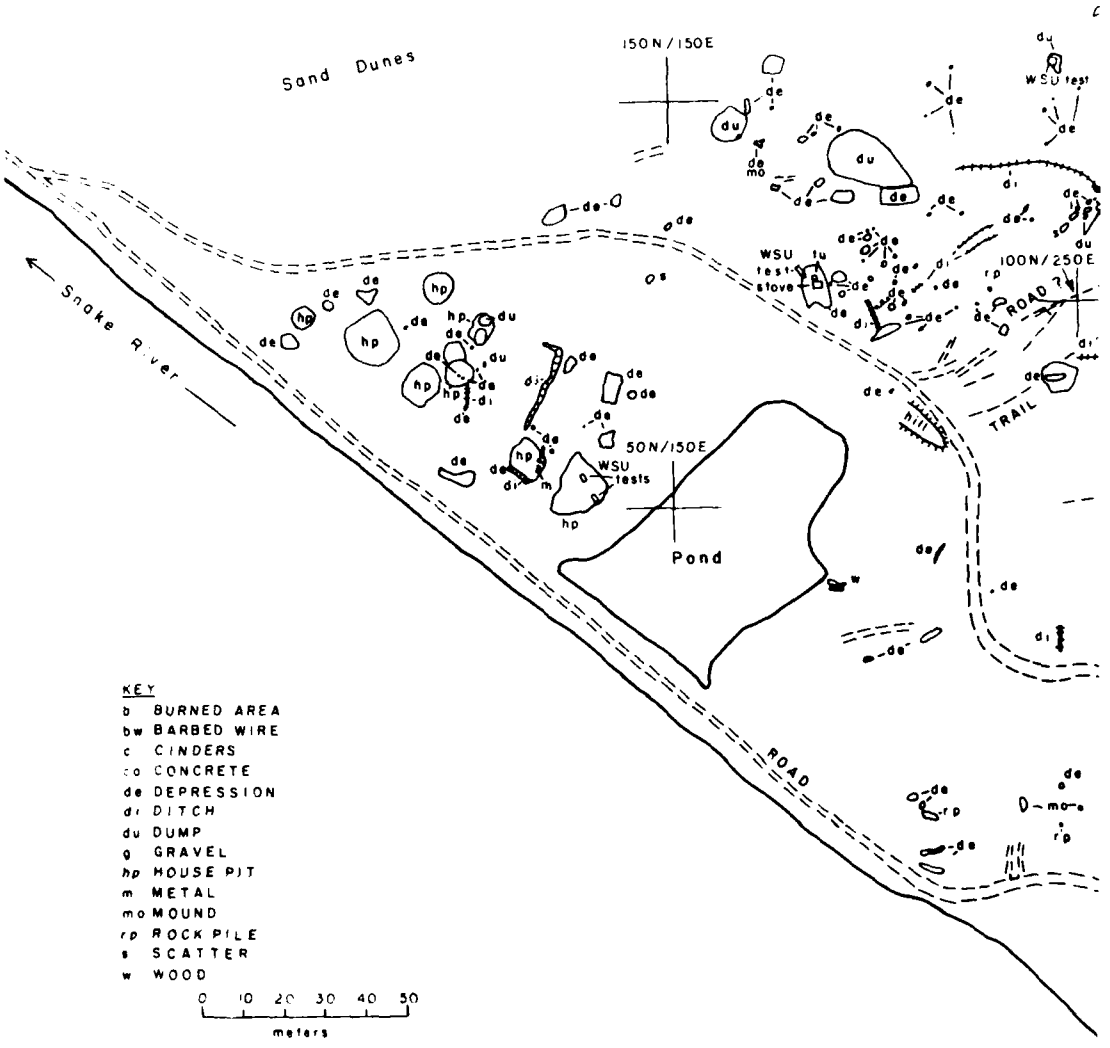
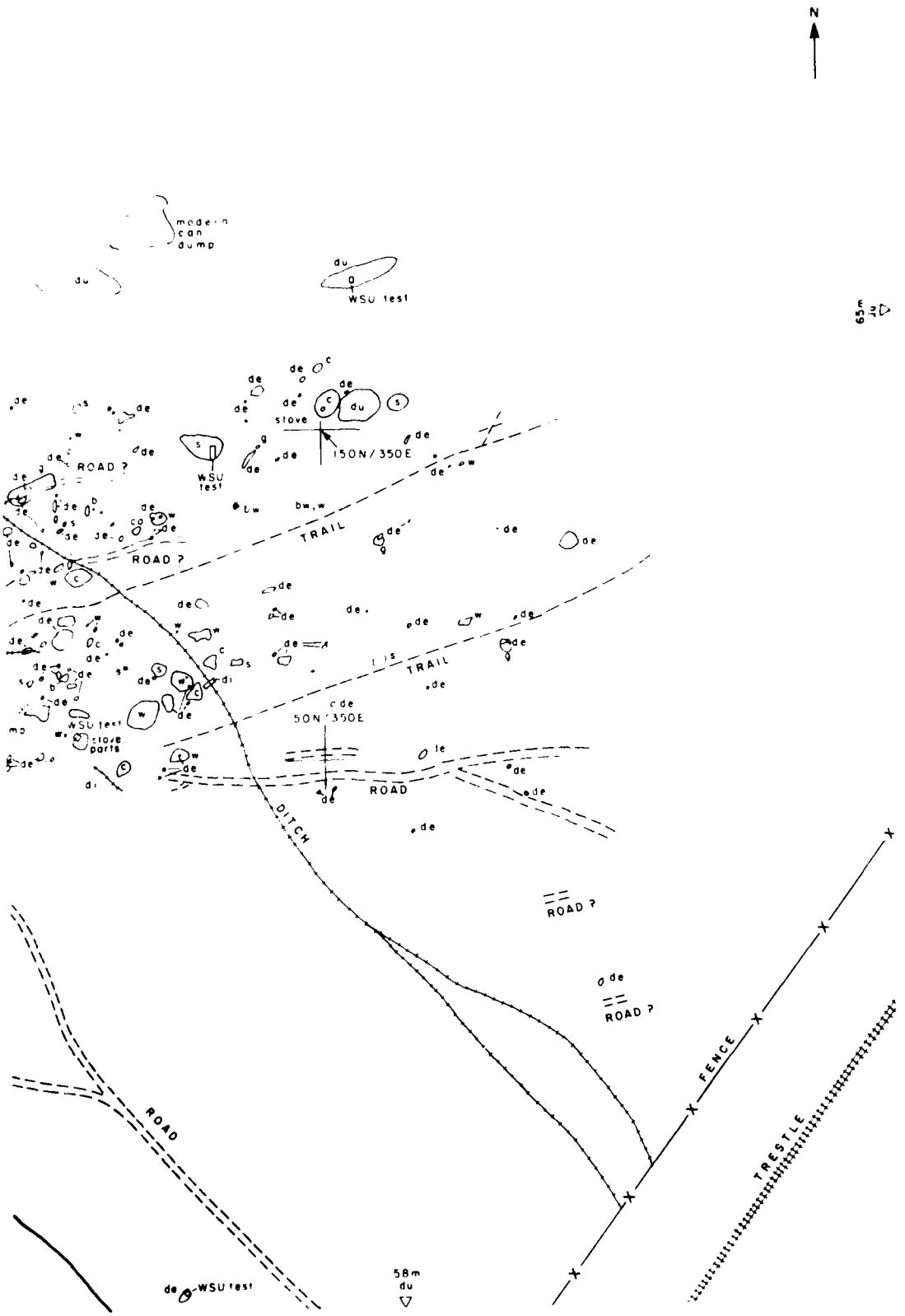


Fig. 3. Plan of 45-FR-51 showing all features identified.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determine at once which features were worth time expenditure and which were not. It soon became apparent that completely stripping the topsoil off of a feature to find its perimeter, as was done with F120/1, was too time-consuming to justify the information gained, and a new excavation strategy was therefore devised.

Once photographed, the feature was surface-collected, and its probable extent noted. Then, using No. 2 square shovels and working on the line of the grid as much as possible, the excavators skim-shovelled the topsoil in two right-angled cuts one shovel-width wide whose points met in the supposed center of the feature, and whose ends were taken out just past the perimeter of the deposit (Fig. 4); these shovel trenches were less than 5 cm deep.

Some features were abandoned at this point if their artifact yield was insignificant and their depth appeared to be shallow. In most cases, however, a portion of at least one quadrant was excavated to the bottom of the deposit. Still other features required total excavation, and this was accomplished both with shovels and with mason's pointing trowels. Screening was not done, as we felt, then and now, that results would not have justified the time spent on it. The excavators filled out a printed form for each feature, which required them to provide relevant details plus plan and profile drawings; individual notebooks were not kept.

At the end of each day the excavated artifacts were removed to the field laboratory. There they were logged onto artifact inventory forms, and given catalog numbers. As a result of this ongoing cataloging, the more than 30,000 artifacts recovered had all been inventoried within 2 weeks following the excavation's end.

Artifact Classification

In order to deal effectively with this amount of material, we decided to classify it according to function rather than by material of manufacture. The reasons for this common-sense departure from the more usual classification schemes are elaborated upon by Sprague (1981:251-255) who has also provided the classification system itself (Sprague 1981:255-258). Not all the categories in Sprague's complete typology, comprising eight major categories, are applicable to the Joso Bridge site. Those that are, are as follows:

I. Personal Items: Clothing, Footwear, Adornment, Body ritual and grooming, Medical and health, Indulgences, Pastimes and recreation, Pocket tools and accessories, Luggage.

II. Domestic Items: Furnishings, Housewares and appliances (culinary; gustatory; portable illumination; portable waste disposal; portable heating, cooling, and atmospheric conditioning; home education and business), Cleaning and maintenance (cleaning, laundry, sewing, pet maintenance).

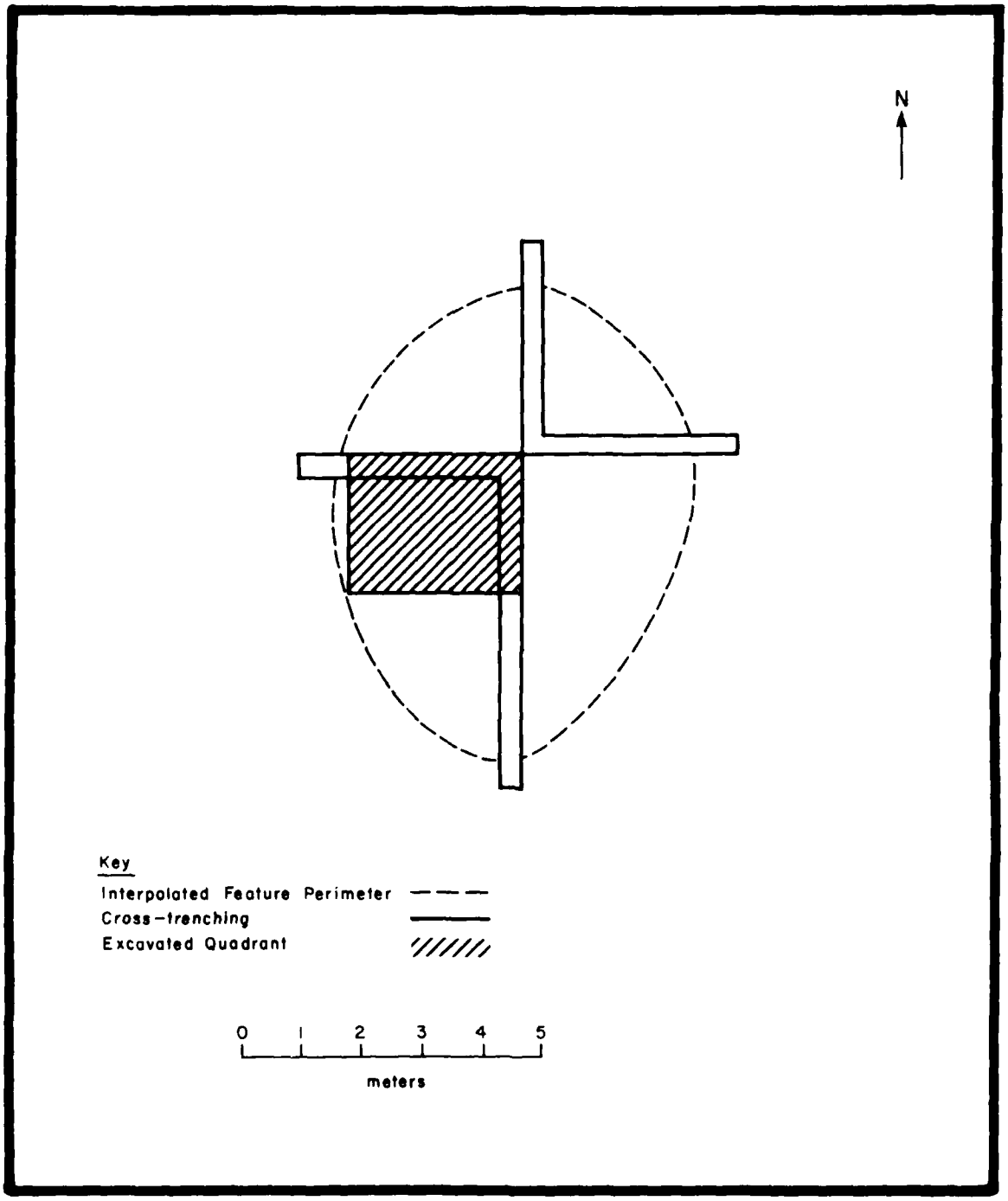

Fig. 4. Plan of a typical excavated feature illustrating right-angle cross-trenching, interpolated feature perimeter, and one excavated quadrant. Original drawing of F290/2 by J. Horn and C. Ritchie, excavators.

III. Architecture: Construction (materials, hardware); Fixed light and power.

IV. Personal and Domestic Transportation: Vehicles, Maintenance.

V. Commerce and Industry: Agriculture and husbandry, Hunting, Construction (architecture, transportation, maintenance).

VI. Group Services: Utilities (transportation system).

VII. Group Ritual: Not applicable.

VIII. Unknowns.

Because the project funding did not allow for detailed artifact analysis prior to preparation of this inventory, certain categories of artifacts remain to be studied in greater depth. While some of this work is now in progress by University of Idaho graduate students, their analyses may not be finished by the completion deadline for this inventory, so will be submitted separately. It is therefore necessary to make a few assumptions regarding assignment of artifacts to certain of the functional categories. These are as follows:

1. All cans are assumed to have held foodstuffs unless there is other easily-recognizable evidence to the contrary, such as shape or embossing.

2. All ceramic fragments are similarly assumed to be gustatory.

3. All nails are assumed to be building hardware pending more detailed size analysis.

4. Non-diagnostic, and therefore unidentifiable, glass fragments will be assigned to the various functional categories on the basis of their representation, by color, amongst the identifiable fragments.

5. All crown finishes on bottles, as well as metal crown caps, are assumed to be from beer.

6. In features where parts of sheet metal stoves were found, any sheet metal fragments are assumed to be from stoves; pending analysis, all stoves are assumed to be for cooking unless there is other compelling evidence to the contrary.

7. The few prehistoric artifacts found are not included in this classification.

The inventoried artifacts were tallied individually by feature and function under the Sprague system of classification. These original tally sheets, which are on file at the Laboratory of Anthropology, University of Idaho, Moscow; form the basis for this summary (Tables 1, 2) of functional artifact categories.

TABLE 1

Summary of functional artifact categories by excavated feature

Feature No.	Personal Items	Domestic Items	Architecture	Personal and Domestic Transportation	Commerce and Industry	Group Services	Unknowns	TOTAL
1. F1[illegible]/1	-	37	-	-	7		7	51
2. F1[illegible]/2	-	10	-	-	2	-	3	[illegible]
3. F1[illegible]/1	164	888	56	1	9	-	45	1163
4. F1[illegible]/2	-	8	4	1	-	-	2	[illegible]
5. F1[illegible]/3	18	28	5	-	2	-	29	82
6. F1[illegible]/1	-	0	-	-	-	-	-	0
7. F1[illegible]/2	-	-	-	-	-	-	-	-
8. F1[illegible]/1	-	-	-	-	-	-	-	-
9. F160/2	3	195	2	-	-	-	1	201
10. F170/1	28	181	35	-	-	3	18	265
11. F17[illegible]/2	-	3	-	-	-	-	-	3
12. F180/1	16	425	9	-	2	-	51	503
13. F180/2	1	60	-	-	-	-	1	62
14. F190/1	9	1270	-	4	-	-	12	1295
15. F190/2	-	1	-	-	-	-	-	1
16. F190/3	-	2	-	-	-	-	-	2
17. F190/4	-	3	-	-	-	-	-	3
18. F200/1	-	30	5	-	-	-	-	35
19. F200/2	-	11	-	-	-	-	1	12
20. F230/1	16	68	-	1	-	-	4	89
21. F230/2	-	21	19	-	-	-	-	40
22. F240/1	41	30	-	1	-	-	5	77
23. F240/2	15	46	9	-	-	2	14	86
24. F240/3	2600	2121	166	-	8	2	292	5189
25. F250/1	1414	560	186	-	27	4	593	2794
26. F250/2	313	89	110	-	4	-	78	594
27. F260/1	17	16	4	1	-	1	35	74
28. F260/2	16	87	152	-	4	-	25	284
29. F260/3	-	8	-	-	-	-	-	8
30. F260/4	50	96	6	-	1	-	29	182
31. F260/5	5	27	5	-	-	-	9	46
32. F260/6	-	1	7	-	1	-	8	17
33. F260/7	12	21	4	-	-	-	10	47
34. F260/8	3	18	9	-	1	-	2	33
35. F270/1	5	54	3	1	-	-	3	66
36. F270/2	6	30	11	-	1	-	3	51
37. F270/3	5	16	-	-	-	-	5	26
38. F270/4	986	105	46	-	8	1	48	1194
39. F270/5	5	2	-	2	-	-	4	13
40. F270/6	37	564	38	-	22	-	151	812
41. F270/7	191	84	16	-	1	-	61	353
42. F270/8	4	36	-	-	-	-	10	50
43. F270/9	17	31	-	-	-	1	12	61
44. F280/1	17	7	5	-	1	1	58	89
45. F280/2	-	92	23	-	-	-	50	165
46. F280/3	89	159	1	-	-	-	-	249
47. F280/4	12	2	15	-	-	-	13	42
48. F280/5	2	6	56	-	-	-	15	79
49. F280/6	7	73	1	-	-	-	6	87

TABLE 1 *continued*

Feature No.	Personal Items	Domestic Items	Architecture	Personal and Domestic Transportation	Commerce and Industry	Group Services	Unknowns	TOTAL
50. F32/1	317	8	49	-	1	-	64	439
51. F32/2	280	59	61	-	4	3	31	438
52. F32/3	804	229	27	-	-	-	49	1109
53. F32/4	64	48	113	-	5	-	44	264
54. F32/5	94	24	11	-	-	-	14	142
55. F32/6	-	1	-	-	1	-	1	3
56. F32/7	4	16	-	-	-	-	5	25
57. F32/8	31	6	11	-	-	-	25	73
58. F32/9	436	79	52	-	1	-	21	589
59. F32/10	95	6	11	-	-	-	15	127
60. F32/11	2	1	34	-	-	-	8	45
61. F32/12	5	5	11	-	-	-	25	46
62. F32/13	51	13	12	-	-	-	4	80
63. F32/14	13	310	376	-	50	-	34	783
64. F31/1	1566	404	364	-	3	-	688	3025
65. F31/2	273	38	267	-	2	10	31	621
66. F31/3	3645	244	125	-	1	-	262	4277
67. F31/4	-	-	9	-	-	-	1	10
68. F31/5	139	6	20	-	-	-	20	185
69. F31/6	65	7	4	-	-	-	57	133
70. F31/7	1	4	-	-	-	-	3	8
71. F32/1	24	7	-	-	-	-	17	48
72. F33/1	1	2	27	-	-	-	7	37
73. F33/2	1	3	7	-	-	-	-	11
74. F33/3	-	1	1	-	-	-	1	3
75. F33/4	-	-	-	-	-	-	-	-
76. F33/5	-	-	-	-	-	-	-	-
77. F34/1	1	15	3	-	-	-	3	22
78. F34/2	1	-	1	-	-	-	3	5
79. F35/1	499	4	2	-	-	-	50	555
80. F35/2	47	7	3	-	-	-	39	96
81. F35/3	145	259	22	-	1	1	8	436
82. F35/4	2	25	6	-	-	-	16	49
83. F36/1	12	280	1	-	1	-	20	314
84. F36/2	-	226	-	-	1	-	1	228
85. F36/3	98	18	22	-	-	-	34	172
86. F37/1	2	33	-	-	-	-	26	61
87. F37/2	1	3	-	-	-	-	-	4
88. F38/1	9	1	23	1	1	-	5	40
89. F39/1	-	72	-	-	-	-	2	74

TABLE 1

Artifact count, by functional classification

I. PERSONAL ITEMS

Clothing

Belt	3
Buckle	3
Button, overall	42
Button, other	28
Cloth	39
Corset stays	16
Cuff link	1
Gaiter	5
Glove	11
Hardware, overall	8
Hardware, suspender	12
Other	1
	167

Footwear

Buckle, galosh	6
Button	1
Eyelet	4
Heel plate	1
Leather	219
	231

Adornment

Bead	1
Locket	1
	2

Body ritual and grooming

Bottle, toiletry	5
Comb	3
Hairpin	1
Jar, cold cream?	56
Mirror	5
Talcum can	3
Toothbrush	1
	74

Medical and health

Bottle, medicine	611
Cap, medicine bottle	2
Cork, medicine bottle	4
Eye dropper	1
	618

Indulgences

Bottle, beer	6836
Bottle, gin	44
Bottle, whiskey	3431
Bottle, wine	1578
Bottle seal, wine	1
Can, beer	3
Can, snuff	23
Can, tobacco	191
Cap, beer bottle	1073
Cork, whiskey	2
Cork, wine	10
Foil, cigarette/gum	1
Pipe, smoking	3
Shot glass	66
Stopper, glass, whiskey	8
	13,270

Pastimes and recreation

Clay pigeon	1
Doll	1
Gun, toy	1
Harmonica	1
Phonograph record	40
Poker chip	13
	57

Pocket tools and accessories

Bottle opener	60
Coin	6
Knife, pocket	3
Knife, pocket, sheath	1
Pen	2
Pencil, graphite	5
Pencil, slate	1
Watch	3
	87

Luggage

Band, metal	2
	2

Clothing or footwear

Glove or shoe	29
	29

Medical or indulgences

Bottle, medicine/liquor	320
Cork, medicine or liquor	10
	330

II. DOMESTIC ITEMS

Furnishings

Furniture

Bed parts	41
Caster	1
Upholstery tack	2
	44

Housewares and appliances

Culinary

Basin	1
Bowl	1
Bucket, lard	2
Bucket, water	26
Can, baking powder	14
Can, spice	1
Colander	1
Food grinder	1
Pan/pot	5
Stove part	183
Utensil, cooking	3
Unknown; agateware	5
	243

TABLE 7 (continued)

Gustatory	
Bone	312
Bottle, condiment	201
Bottle, milk	1
Bottle, soda water	5
Can, food	5842
Can, soda pop	1
Glass, cut/pressed	56
Glass, tumbler	285
Jar, canning	220
Jar, canning, lid	19
Pit/seeds	14
Shell, egg	6
Shell, mollusc	43
Stopper, sauce bottle	1
Tableware, ceramic	1810
Tableware, other	3
Utensil, eating	14
Other	1
	9437
Culinary or Gustatory	
Other	1/1
Portable illumination	
Battery core	1
Can, kerosene	1
Lamp chimney	266
Lamp part, glass	13
Lamp part, metal	15
	296
Portable waste disposal	
Chamber pot lid	1
Wash basin	1/2
Portable heating	
Cast iron stove parts	29/29
Paper education and business	
Bottle, ink	19
Clock part	5
	24
Cleaning and Maintenance	
Cleaning	
Broom wire	1
Carpet beater	1/2
Laundry	
Can, lye	2
Can, potash	1
Washtub part	4/7
Sewing	
Cobbler's stand	1
Pin, safety	3
Pin, straight	1/4
Pet maintenance	
Dog chain	1/1

III. ARCHITECTURE

Construction	
Materials	
Brick	9
Glass, window	47
Wood	56
Tar paper	5
	1104
Hardware	
Doorknob	3
Hinge	1
Hook	4
Latch bolt	2
Lock	5
Nail	1513
Screw	1
Staple, hasp	1
Tack	1
Tar paper tack/grommet	32
Tent grommet	6
	1569
Fixed light and power	
Insulator, porcelain	1/1

IV. PERSONAL AND DOMESTIC TRANSPORTATION

Vehicles	
Heater	1
License plate	1
Map light	1
Muffler	1
Reflector	1
Spring part	1/6
Maintenance	
Can, oil	6
Strainer, gasoline	1/7

Agriculture and husbandry	
Staple, fence	4
Wire, fence	39
Wire, barbed	1
Wood, fence	1
	45
Hunting	
Cartridges	
.22 caliber	42
.25 caliber	1
.32 caliber	3
.38 caliber	3
.44 caliber	1
.45-70 caliber	1
Shotgun shells	5
	56
Construction	
Architecture	
Blade, plane	1
File	2
Needle, canvas	1
Rule, carpenter's	2
Transportation	
Blasting cap	1
Brake drum, winch	2
Horseshoe	1
Welding rod	1
Maintenance	
Can, paint	5
Paint, dried	8
	24

VI. GROUP SERVICES

Utilities	
Transportation system	
Bolt	2
Break valve, train	1
Rivet	1
Spike, bridge	1
Spike, track	6
Spike, tram	17
	28

VII. UNDESIGNATED

Aluminum	1
Barrel parts	107
Brass, name plate	2
Brass, tacks	1
Brass, unknown	2
Burlap cloth	14
Can, 1-gallon	5
Can, other	2
Ceramic, unknown	3
Clay, burned	194
Coal/cinders/charcoal	221
Copper, sheet	1
Copper, wire	1
Foil	6
Glass, amber/brown	185
Glass, aqua	6
Glass, blue/green	226
Glass, clear	589
Glass, cobalt	12
Glass, green	28
Glass, melted	227
Glass, sun-colored amethyst	196
Glass, color not recorded	337
Iron, bar	3
Iron, bolt/nut	14
Iron, bracket	1
Iron, cap/stopper/spout	5
Iron, chain	3
Iron, clamp	1
Iron, cloth attached	10
Iron, corner brace	1
Iron, fragments	497
Iron, handle	27
Iron, hinge	3
Iron, machine part	14
Iron, magnet	1
Iron, name plate	3
Iron, padlock	1
Iron, sheet	32
Iron, spigot	1
Iron, strap/strip	54
Iron, washer	5
Iron, wire	123
Iron, unknown	22
Lead	5
Leather	119
Miscellaneous, burned	2
Miscellaneous, organic	2
Paper	6
Plastic	2
Rubber	7
Screening	4
Wood, worked	3
Unknown	2
	3341

Archaeological Features and Interpretations

The 89 features which were investigated (Fig. 5) are discussed separately below. Where appropriate, an interpretation is made regarding the function of each, its possible date if different from that of the camp, and the group or groups which may have created or utilized it. In addition, certain of the more interesting marked artifacts are specifically mentioned.

F100/1

F100/1 was identified as a double depression, each one approximately 1 m in diameter, in the center of grid square 100N/100E. Because this area was also Washington State University's House Pit No. 7 (HP-7), it was surface-collected only, and not excavated. The artifacts collected are primarily domestic in nature, and include crimped seam cans, stove parts, and one enamelled steel pudding pan. Crimped seam cans, while invented in the late nineteenth century, were not in general use until 1922 (Fontana and Greenleaf 1962:73). This fact, combined with the proximity of F100/1 to Perry Station, suggests that these artifacts were dumped by later station personnel rather than by "Trestle City" inhabitants.

F100/2

F100/2 was a small linear depression in the north middle of grid square 90N/100E. Because it was adjacent to WSU's HP-7 and HP-8, it too was surface-collected only, and not excavated. Once again, the crimped-seam cans were probably from Perry Station; part of a badly-weathered wooden 2 x 4 and some modern barbed wire suggest that a fence existed here at a later date.

F120/1

F120/1, as observed before excavation, was identified as a shallow depression some 50 cm^2 in the southwest corner of grid square 130N/120E. This feature had been previously located by WSU, and given the Historic Feature number 55 (HF-55). This depression appeared to have been recently investigated in some manner, as there was an upcast of material next to one side of it. Ceramic, glass, and metal artifacts were visible on the surface, as was burned material. Beginning in the center of F120/1, it was skim-shovelled and trowelled outwards until its entire perimeter was ascertained. The depression proved to be superfluous, and had in fact been created by recent digging. Final surface dimensions of this feature measured 7.25 m east-west by 5 m north-south. Test pits which were put into the northeast and southwest quadrants showed that the depth of the deposit ranged from approximately 15 cm in the southwest to as much as 25 cm in the northeast. Since large amounts of cinders were present, but few artifacts appeared burned, this feature has been interpreted as a dump for household rubbish and stove ash.

A few of the artifacts deserve mention. A fragment of the base from a canning jar has been identified as having been made by the Kerr Glass Manufacturing Co. of Portland, Oregon, a plant which was only in operation from 1904 to 1909 (Toulouse 1971:306). One of the few beer bottles bears the number "13" on the side, just above the base. Numbers in that position have been called "sidemarks" (Adams, Gaw, and Leonhardy 1975:131) and are said to indicate the date of manufacture, in this case 1913. One medicinal bottle, for Warner's Safe Kidney and Liver Remedy, can be dated to after 1907, when the Pure Food and Drug Act went into effect. This law required that patent medicines modify both their injurious ingredients and their exaggerated claims; a pre-1907, nearly-identical bottle from Boise Chinatown (Jones n.d.) differed only in that it contained the word "Cure" instead of "Remedy." Marked ceramics included "K.T.K. Co.," for Knowles, Taylor, and Knowles of East Liverpool, Ohio, and "Homer Laughlin 72 N" which dates to July 1902 (Lehner 1980:86, 88). The latter firm is still in business today. Decorated ceramics include examples of decalcomania, "rarely used in the U.S. before 1900" (L. Sprague 1980:19) and art-deco-type rectilinear designs typical of the 1920s and 1930s.

Because of its proximity to Perry Station and the range of dates for the datable artifacts, F120/1 is more likely to have been associated with Perry Station than with "Trestle City." In addition, the canning jars and the decorative tableware would tend to suggest the presence of one or more women at Perry Station.

F120/2

F120/2 was located in grid squares 80N/110E and 90N/120E. It was identified in the field as a narrow, shallow, linear ditch, containing cans and wire, which turned a right angle at its northeast corner. Because it was not in the fish raceway area, and was near the prehistoric house pits, this feature was surface-collected only. The few artifacts recovered provided no real clue to the purpose or date of F120/2, which was perhaps associated, at least in proximity, with Perry Station.

F120/3

F120/3 spread across parts of three grid squares, 60N/110-130E. Because this feature was also WSU's HP-5, and had been previously tested by them, it was only surface-collected. The WSU excavators' conclusion, with which we agree, is that this feature is associated with one of the Perry Station buildings (Cleveland 1980:110-112), probably the two-story one visible in Fig. 2, centered between the two river spans.

Fig. 5. Key to excavated features.

No. on Plan	Feature No.	Description
1	F100/1	Trash accumulation
2	F100/2	Trash accumulation
3	F120/1	Household dump
4	F120/2	Trash accumulation
5	F120/3	Trash accumulation
6	F140/1	Trash accumulation
7	F140/2	Depression
8	F160/1	Depression
9	F160/2	Can dump
10	F170/1	Stove ash and household dump
11	F170/2	Trash accumulation
12	F180/1	Cellar-type area for bunkhouse
13	F180/2	Minor trash dump
14	F190/1	Major can dump
15	F190/2	Depression
16	F190/3	Trash accumulation
17	F190/4	Trash accumulation
18	F200/1	Trash accumulation
19	F200/2	Trash accumulation
20	F230/1	Can dump
21	F230/2	Depression
22	F240/1	Trash accumulation
23	F240/2	Trash accumulation
24	F240/3	Double privy; major dump above
25	F250/1	Major glass dump
26	F250/2	Social/recreational area
27	F260/1	Large deep depression
28	F260/2	Trash accumulation
29	F260/3	Depression
30	F260/4	Depression
31	F260/5	Trash accumulation
32	F260/6	Trash accumulation
33	F260/7	Trash accumulation
34	F260/8	Depression
35	F270/1	Small can dump
36	F270/2	Can scatter
37	F270/3	Depression
38	F270/4	Social/recreational area
39	F270/5	Cellar
40	F270/6	Major bone dump
41	F270/7	Trash scatter; stove dump
42	F270/8	Depression
43	F270/9	Trash accumulation
44	F280/1	Stove ash dump
45	F280/2	Stove ash dump
46	F280/3	Major stove ash dump
47	F280/4	Social/recreational area
48	F280/5	Trash accumulation
49	F280/6	Trash accumulation
50	F290/1	Social/recreational area
51	F290/2	Minor dump; social area
52	F290/3	Dumping area
53	F290/4	Social/recreational area
54	F290/5	Minor dump; social area
55	F290/6	Trash accumulation
56	F290/7	Trash accumulation
57	F300/1	Cellar
58	F300/2	Stove ash dump; recreational area
59	F300/3	Extension of No. 58
60	F300/4	Extension of No. 58
61	F300/5	Stove ash and trash dump
62	F300/6	Extension of Nos. 58 and 59
63	F300/7	Privy
64	F310/1	Household dump
65	F310/2	Social/recreational area
66	F310/3	Social/recreational area; refuse pit
67	F310/4	Trash accumulation
68	F310/5	Stove ash dump
69	F310/6	Runoff ditch
70	F320/1	Depression
71	F320/2	Trash accumulation
72	F330/1	Trash accumulation
73	F330/2	Depression
74	F330/3	Depression; scatter of wood
75	F330/4	Stove ash dump
76	F330/5	Stove ash dump
77	F340/1	Trash accumulation
78	F340/2	Trash accumulation
79	F350/1	Minor glass dump
80	F350/2	Minor glass dump
81	F350/3	Stove ash and trash dump
82	F350/4	Depression
83	F360/1	Can dump
84	F360/2	Major can dump
85	F360/3	Small can dump
86	F370/1	Extension of No. 87
87	F370/2	Post hole for fence post
88	F370/3	Stove ash dump
89	F370/1	Major can dump

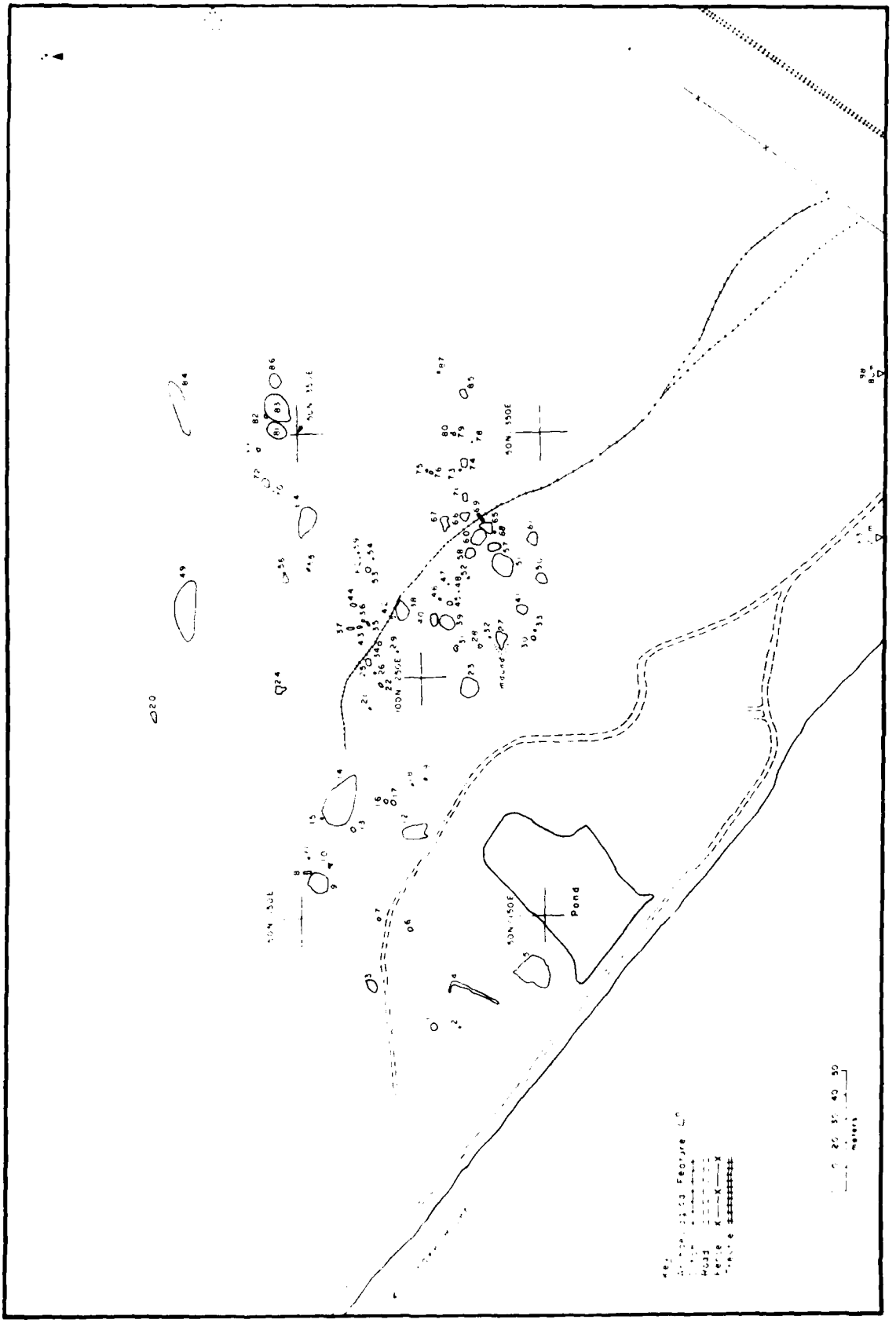

Fig. 5. Plan of 45-FR-51 showing investigated features only.

F140/1

F140/1, in roughly the middle of grid square 110N/140E was a small scatter of cans and wire; it was WSU's HF-54. Although this feature was very near the proposed fish raceway area, it was surface-collected only. Probing below the surface indicated that no more artifacts would be recovered by excavation, so no further work was undertaken on this feature, of unknown purpose.

F140/2

F140/2 was a rectangular, "privy-shaped" depression in grid square 120N/140E, near the 150E line. One of our original objectives was to try to locate some of the privies visible in Fig. 1, as well as to identify former locations of ones that may have been moved. Since privies often contain many diagnostic artifacts, possible such locations were selected for excavation out of proportion to their importance to the site as a whole. These features usually appeared on the ground as small square, rectangular, or oval depressions measuring 1 m on a side, or 1 x 2 m. F140/2 was typical of these, and its excavation will be dealt with in somewhat greater detail than will that of subsequent, similar, features which will merely be referred back to this one. While most such features selected for excavation had artifacts visible on the surface which were first collected, this one did not. Like most, however, it was probed with a pointed metal rod approximately ½ in. in diameter and 3 ft. long. Because probing indicated that the depression was deep and soft, and might contain artifacts, it was first cross-trenched to determine its extent and then excavated to a depth of 30 cm. Because no artifacts were found, only rocks, F140/2 was not investigated further, but abandoned; its purpose, if any, remains unknown.

F160/1

F160/1 was a grave-sized depression in the northeast quadrant of grid square 150N/160E, near a large can dump. When excavators shaved off the top few centimeters of this feature with a shovel, a bulldozer's tread mark could be clearly seen just below the surface. No artifacts were recovered.

F160/2

F160/2 was also located in grid square 150N/160E, in the southern half, and was a large scatter of rusty tin cans. Following surface collection of the visible material, the area was cross-sectioned by shovel-shaving to determine its perimeter (Fig. 4), and was found to be roughly oval in shape, approximately 4.5 m east-west by 4.0 m north-south. Since some ceramics and glass were concentrated near the center of the feature, a 1 m^2 area was excavated there; the depth of the deposit was found to be only 10 cm.

The artifacts were almost entirely domestic rubbish, consisting particularly of cans and plain crockery fragments. Of the cans which could be identified, most were the kind which were filled by means of a hole in the top, a type which was not really superseded by modern-style cans until about 1922 (Fontana and Greenleaf 1962:73).

So, while Feature 160/2 could, in terms of time, be a dump of either Perry Station or "Trestle City," it seems more likely that it was from the latter since it contains food cans and plain earthenware in contrast to the canning jars and decorated ceramics which, we speculate, are more characteristic of Perry Station dumping areas. One marked artifact was a lid stamped "Crescent Baking Powder." The Crescent Food Products Company, established in Seattle, Washington, in 1889 (Periodical Publishers Association 1934:14) is still in business today; a 1-lb. can of their baking powder sold for 25 cents in 1914 (*Garfield Co. Standard* 1914:7) and was packaged in a blue can (Walter J. Swanson 1981: personal communication).

F170/1

F170/1 appeared as mounds and depressions with cinders and glass visible on the surface; it was located in grid square 140N/170E, and was WSU's HF-52. Following surface collection the area was cross-sectioned and the deposit was determined to be oval in shape, approximately 8 m north-south by 3 m east-west. A 2.5 m^2 area was opened in the southeast quadrant of the feature and was excavated to a depth of some 50 cm. The cultural material was mainly near the surface, and was above a layer of cinders some 10-15 cm thick. Once again, the presence of decorative ceramics and glassware means that this feature can most probably be ascribed to Perry Station. The thick layer of cinders below the artifacts would indicate that this dump was first used primarily for emptying refuse from coal-burning stoves, and that later other rubbish was included with that from the stoves. Among the marked artifacts were some earthenware fragments marked "C.P. Co." Although a number of potteries used the initials "C.P.," the Joso marks are most similar to those illustrated for the Crown Pottery Co. of Evansville, Indiana, which began operation in 1891 (Barber 1904:163). One beer bottle, with "AB Co 13" on its base, was from the American Bottle Co., Toledo, Ohio, and dates from 1916-1929 (Toulouse 1971:30). A hard rubber comb bearing the letters "PACIFI..." is similar to ones illustrated in mail-order catalogs from both Sears and Montgomery Ward. Although this example is plain, decorated ones with the word "ATLANTIC" were advertised for 10-12 cents each in Ward's 1895 catalog (Montgomery Ward & Co. 1969:105).

F170/2

F170/2, located in grid square 150N/170E, was a depression with one can nearby. Because it was thought that this was a likely location for a privy, possibly No. 13 in Fig. 1, the feature was excavated as described for F140/2 but only produced two more can fragments and no evidence of soil disturbance.

F180/1

F180/1 lay almost entirely in grid square 110N/180E. It was a large depression, measuring some 5 m wide by 9 m long. This feature was also WSU's HF-53, and had had an excavation unit placed in the west side; the WSU excavators suggested that this feature may have been "a washroom sump hole," "an abandoned root cellar" or an "underground storage facility" (Cleveland 1980:116). In comparing the location of this feature with that of the buildings in the early photograph (Fig. 1) it is quite possible that this depression may have been a cellar-type area for the large one on the left, No. 12. The bottom of the feature, at the southern end, produced an interesting collection of artifacts, including wood and metal bed parts and several pieces from washtubs. On the basis of these artifacts, and the presence, in the old photograph, of what look like sheets drying on clotheslines on the west side of building No. 12, F180/1 appears to be a cellar associated with a bunkhouse and nearby laundry which was partly filled in with discarded material from these and other neighboring structures when the "Trestle City" buildings were dismantled and removed. Subsequently, the dump in the cellar must have been added to from time to time by the Perry Station people; artifacts near the top included a still-unknown metal cap-like object with embossed lettering reading "Pry Out Front Lugs and Lift, Pat. Nov 3 14." While a search of the Patent Office records for that date did not provide any information on this object, it must have come from Perry Station, since the trestle was completed and opened to train traffic on 15 September 1914 (*Railway Age Gazette* 1915:623). Other Perry Station artifacts included a number of fragments of Kerr wide-mouth self-sealing canning jars, one with an "August 31, 1915" patent date on the base; the cast nameplate "CLIO" from a sheet-metal stove; and painted and gilded ceramic sherds, some with fragmentary manufacturers' marks. Decorated ceramics with identical patterns were found in F120/1, thus reinforcing the interpretation that both these areas were used for dumping by Perry Station people.

F180/2

F180/2 was a round depression some 2.3 m in diameter in grid square 130N/180E; artifacts visible on the surface included ceramic and glass. Following surface collection the feature was cross-trenched to establish the extent of its perimeter, and further tested in the southwest quadrant to a depth of 20 cm. Since very few artifacts were recovered below the 5 cm level, it would seem that this feature, if a dump, was not used very much. Because the ceramics were all plain whitewares this dump has tentatively been assigned to the construction camp.

F190/1

F190/1 was a very large area mostly in grid square 140N/190E. Artifacts were also scattered into grid squares 130N/190E, 150N/190E, 140N/180E and 140N/200E. The surface was covered with cans which appeared to be mostly from evaporated milk and coffee; a few ceramic sherds were also present. This feature, which was WSU's HF-47, was first surface-collected and then cross-sectioned to locate the extent of its perimeter.

Following this a small area in the northwest quadrant was excavated to determine the depth of the deposit, which was found to be approximately 15 cm. A small pit appeared within this test excavation; it was excavated separately and contained 18 cans. Its function within this major can dump is unknown. Interestingly, a total of more than 1000 cans or can fragments were present, but only some 20 sherds of glass. Marked artifacts included lids for B.T. Babbitt's Potash and the same firm's Red Seal Lye, Crescent Baking Powder, Copenhagen Snuff, and a fragment of a soda water bottle embossed "...LLA...RKS...," probably standing for "Walla Walla Soda Works." The B. T. Babbitt firm of New York was established in 1836 and sold its soap business in 1923 (Periodical Publishers Association 1934:14). Its Red Seal Lye was introduced in 1883 (Brand Names Foundation 1947); both the lye and the potash were used in the manufacture of soap. The many cans suggest that F190/1 was a Joso camp feature. Because this particular can dump is nearer than any other to the area identified as the bunkhouse/laundry, F180/1, the presence of the lye and potash cans reinforces the interpretation that the laundry was nearby.

F190/2

During the excavation of F190/1, a depression, F190/2, was noticed on the outskirts in grid square 150N/190E. Upon probing, an object was felt, so the depression was excavated. The object recovered was a very recent 7-up can. In order for it to have been deposited there, the person responsible would have had to dig down through F190/1; however, any relevant surface indications were absent.

F190/3 and F190/4

F190/3 and F190/4 appeared as nearby depressions some 1 m in diameter and 50 cm deep in grid square 120N/190E. Together they were WSU's HF-48. Although several cans were visible on the surface, no artifacts were felt when the depressions were probed. On the chance that they might have been privies, they were excavated in the manner described for F140/2, but yielded only a few metal fragments. Their purpose remains unknown.

F200/1 and F200/2

F200/1 was a small depression with a few metal artifacts visible on the surface, in grid square 110N/200E. When excavated in the manner described for F140/2, nothing was found beyond this surface scatter. The same was true for F200/2, in grid square 100N/200E.

F230/1

F230/1 was primarily a can scatter, beyond the sand dunes to the north, in grid squares 210-220N/220-250E, measuring approximately 15 x 20 m. This feature was surface-collected only, and produced some glass and ceramic in addition to the cans, but did not seem to have any depth below

the surface. The hole-in-top cans and plain ceramic sherds are typical of construction camp debris. Since only 89 artifacts were recovered from this feature, it probably was not used for dumping very frequently; a contributing factor was, no doubt, its inconvenient location on the far side of the dunes.

F230/2

F230/2 was located in grid square 130N/230E. It was a depression about 50 cm in diameter and 13 cm deep. To the northeast of it was a small mound. Only a few cans and some window glass fragments were excavated from this feature, which may have been a bottle diggers' test hole.

F240/1

F240/1, in grid square 130N/240E, was a scatter of cans, glass, stove, and auto parts. During surface collection the extent of the feature was found to measure some 8 x 8 m. Several depressions within the feature were probed with no results. As most of the artifacts had come from the northeast quadrant, a 1 x 1 m^2 area was excavated there, but material below the surface was virtually non-existant. Because of the scattered surface nature of the artifacts, and their spread of dates (from the early 1900s to the late 1930s) it would seem that this feature is merely a trash scatter which accumulated over the years rather than being a recognized dumping place for any one group. Marked artifacts included a tin can lid stamped "EST 19," meaning unknown.
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F240/2

F240/2 was a large bowl-shaped depression covering most of grid squares 70-80N/240E. A thin scatter of metal and glass artifacts was visible on the surface. Following surface collection of these, the area was cross-sectioned and the deposit was found to be concentrated in an area 3.5 m in diameter, which extended only just below the surface; the interpretation for this feature is similar to that for the previous one. Marked artifacts included a lid embossed "COPENHAGEN SNUFF" and one for a "SANITARY" can. The Sanitary can was the open-top kind, which began to replace the hole-in-top type early in the twentieth century, but which did not completely take over until the 1920s (Fontana and Greenleaf 1962:73).

F240/3

F240/3 was perhaps the most interesting of all the features excavated, and certainly the most difficult to interpret in the beginning. It appeared on the surface as a scatter of glass, with metal and shoe

fragments, in grid squares 160N/240E, right up against the sand dunes. It was also WSU's HF-72 which was tested and considered to be a household dump (Cleveland 1980:109-110). The WSU test pit, which they had backfilled, was re-excavated by us in the process of examining F240/3. It looked as if it had originally been about 80 cm wide by 3 m long, and had been excavated to a depth of 1 m (Cleveland 1980:109). The dry and sandy state of the surrounding soil meant that portions of the excavated area tended to collapse, and it was also apparent that the sand dune just to the north had, over the years, been gradually shifting to the south. These dry conditions, however, were responsible for partial preservation of portions of a number of paper labels on bottles.

The WSU trench cut diagonally across the area we had selected for excavation so it was not until we got below the bottom of it, nearly 1.5 m deep, that we could begin to arrive at a correct interpretation for this feature. It soon became apparent that two privies had originally been located here, dug independently through the original sandy soil. In the early photograph showing the camp buildings (Fig. 1), a privy, No. 13, can be seen in the distance, slightly to the left of center, at what may be the approximate location of one of those in F240/3. It seems to have been associated with two buildings which may have been small dwellings, perhaps one for the cook. Because the compacted fecal matter at the bottom of the best-preserved privy measured a maximum of 2½ cm, one can only speculate about the amount of usage these privies received. We do not know how many people used them, although it was probably not many since the main bunkhouse had its own outhouses close by. It may be that the sandy ground was not particularly stable, and tended to collapse, leading to early abandonment as a privy, and subsequent re-use as a rubbish dump. The archaeological evidence itself tends to support this theory, since there was little fecal matter present, few artifacts in the sandy soil just above, and major rubbish deposits above that, to the top.

Samples of the suspected fecal material from both F240/3 subfeatures, as well as that from two other similar features, F300/7 and F310/3, were taken, and submitted to the University of Idaho's Soil Testing Laboratory for analysis. The results are summarized in Table 3.

Because phosphorous is a by-product of human and animal waste, and because it remains in the soil for a long time, it is very useful as an indicator of past human or animal activity in specific areas. It can be seen from Table 3 that at least one of the F240/3 subfeatures was certainly a privy; perhaps the reason the other, similar one does not give such a definite indication is that it may have been in use for a much shorter period of time.

Beer and whiskey bottles in particular, plus cans and can fragments, accounted for the majority of the artifacts recovered. Some of them bore embossed lettering which gave clues to the original contents. "Gordon's London Dry Gin" was represented by several fragments, plus a base with a picture of a boar's head on it. This square blue-green bottle was common

TABLE 3

Summary of the results of soil analyses for suspected privies

Feature	Lab Number	pH	Percent organic carbon	Percent organic matter	Available phosphorous (ppm)	Conclusions
F240/3/A Level 6	N104-4	5.66	3.65	6.28	922.0	Definite privy
F240/3/B Level 5	N104-3	6.94	0.45	0.78	184.0	Possible privy
F300/7 40-45 cm	N104-5	6.17	3.68	6.33	876.0	Definite privy
F310/3 10-20 cm	N104-6	6.39	2.25	3.86	22.0	Not a privy; garbage pit?

from about 1906-1916 (Wilson and Wilson 1968:74). Some amber bottle fragments with embossed lettering were identified as from Bertin and Lipori of San Francisco. Leonce J. Bertin and Constantine Lipori were wholesale grocers and liquor dealers from 1895-1918 (Wilson and Wilson 1968:31). Beer bottles with manufacturers' marks were found from William Franzen and Son, Milwaukee (Toulouse 1971:536).

Tobacco products represented included a Copenhagen Snuff can lid, and cans for Prince Albert and Velvet pipe tobacco. Prince Albert was introduced in 1908 by the R. J. Reynolds Tobacco Company (Periodical Publishers Association 1934:74), and Velvet also appeared in pocket tins about that time (D. C. Pinkley 1981:personal communication).

Food products included a Crescent Baking Powder lid and a Lea and Perrins Worcestershire Sauce bottle. Lea and Perrins embossed bottles were manufactured in the U.S. after 1877 and were discontinued in 1920-21 (Zumwalt 1980:269).

Other marked objects included a toothbrush handle, stamped "Antiseptic 600-Replaced if bristles come out." The bristles have indeed come out, but the manufacturer cannot now be located. A leather sheath, probably for a pocket knife, is stamped in gold "D. Corrado, 204 No. Clark Str., Chicago, Ill." The Corrado Cutlery Co., which has been in business for some 75 years, reports that they probably did not make such knife sheaths until the early 1930s (Terry Corrado Spyrison 1980:personal communication). Marked ceramics were a small platter stamped ".....ughlin ...OTEL China", from Homer Laughlin China Company of East Liverpool, Ohio and Newell, West Virginia, and a banded dinner plate stamped "OP Co, Syracuse NY." The Onandaga Pottery Co. of Syracuse began business in 1871 and is still in operation as the Syracuse Pottery Co; the numeral "74" in a circle on the back of the plate means that it was manufactured in November 1909 (Lehner 1980:146-147).

A number of other interesting, unmarked objects were also recovered, among them some red, white, and blue poker chips and some fabric-covered metal strips, which were probably corset stays.

While most of the artifacts in the lower layers would have come from the Joso construction camp, this dump was probably added to in later years by Perry Station people.

F250/1

F250/1 was located in grid square 130N/250E. It was a circular depression under 2 m in diameter and perhaps 50 cm deep. Following surface collection the area was cross-trenched by shovel-shaving, and the artifact yield indicated that the northeast quadrant should be excavated. This was done, and the other quadrants were eventually excavated as well, revealing a pit some 1.5 m north-south by 2.5 m east-west, and 80 cm deep. This pit contained a great deal of glass, numerous fragments of plain white

earthenware, and some pieces of decorated earthenware and porcelain. Surrounding the pit was a bank 20-30 cm high, containing a great deal of broken glass. The bank in fact looks as if it had been dug out of the original hole, possibly by a bottle digger. This interpretation seems to be confirmed by the finding of several sherds of blue willow-patterned earthenware, almost certainly from the same vessel, which were found both near the top and near the bottom of the pit, and by the absence of any whole bottles. Because of the location of this feature, near the center of the site, we feel that it was a pit purposely dug to dispose of the refuse it contained. While it yielded some artifacts that could have been from Perry Station, these are few in number and were probably deposited later, once the construction camp was gone.

Marked artifacts included fragments from Gordon's Gin bottles and Hunyadi Janos water. Hunyadi Janos, a fifteenth century Hungarian hero, was the trade name used by the Saxlehner company of Budapest for their "Bitterquelle," a spring water containing magnesium sulphate (Toulouse 1971:257-258). Since this "natural aperient," or laxative, dates from 1863 to ca. 1900 (Toulouse 1971:257), the bottle may have been re-used for something else once the original contents had been consumed. Although we cannot be certain of all the contents we do know the names of some of the manufacturers of the F250/1 bottles. One was made by Illinois Glass Co., Alton, Ill., ca. 1900-1916 (Toulouse 1971:264) and another by Illinois Pacific Glass Co./Corp., San Francisco, ca. 1902-1930 (Toulouse 1971:268).

Overall buttons found included one embossed "Boss of the Road" with a bulldog design, and another labelled "Cantripum." In 1912, Boss of the Road blue denim overalls with six pockets and elastic suspenders sold for "85 cents the pair, less 10 percent discount for cash" (*East Washingtonian* 1912:5).

A few marked ceramics were recovered and are now being identified. The base of one small earthenware platter was printed, in blue, "U.S.M.C. 1909." How a platter from the United States Medical Corps (not the U.S. Marine Corps) came to be at Joso may never be known.

F250/2

F250/2 was just south of F250/1, in grid square 120N/250E. On the surface it appeared as a shallow depression some 1 m in diameter, with associated metal and glass, surrounded by an area of cinders. Following surface collection, a 2.5 m^2 area in the southwest quadrant was excavated, as well as two small depressions in the northeast quadrant. Except for the depressions, the artifact layer was quite shallow. This feature produced more clothing hardware than any other, including buckles, suspender parts, and overall buttons, for a total of 34 items. Many of these were marked with such brands as "Cantripum Battleboro, VT.," "Day's Big Five," "Finck DETROIT SPECIAL," "Monarch of the West," "Carhartt's O'ALLS & GLOVES," and "Boston Garter Velvet Grip." In contrast to these items of apparently manly apparel, but found with them, was a pale pink porcelain doll's ear, the first artifact to indicate the presence of children at Joso.

This feature has been tentatively identified as a gathering place for recreation and socializing, particularly if looked at in combination with F250/1, the bottle pit, which could have been used to conveniently dispose of the empties. If the workmen were congregating in an outside area it would not be surprising to find so much clothing hardware here, nor would the presence of the doll's ear present an interpretive problem. This feature also contained a few decorated ceramic sherds with the same pattern as some found in F250/1, implying that Perry Station refuse found its way here as well.

F260/1

F260/1 was a large double depression, with sloping sides, some 5 x 10 m at the top, in grid square 70N/260E. The west side was only 60 cm deep, rising to 30 cm in depth in the middle, and falling to 1.5 m deep on the east side. This feature was also WSU's HF-34. Some metal and glass were visible on the surface and after this was collected the feature was cross-sectioned and the southwest quadrant was excavated, to a depth of not more than 5 cm. Very few artifacts were located below the surface, and of these, one was a liquor bottle with a portion of the wording "Federal Law Forbids Sale or Reuse of This Bottle," which cannot date before 1933. Other datable artifacts included stove parts, one stamped "Hero 8-15;" a modern cinnamon can with a plastic spout; and a modern stubby beer bottle. The purpose of this large depression could not be positively ascertained from such a brief archaeological inquiry, but the adjacent mound to the southwest, the presence of modern artifacts on the surface, and the absence of artifacts below the surface all point to a modern origin for this feature.

F260/2

F260/2 consisted of a surface scatter of stoneware fragments in grid square 80N/260E. Following collection of these the northeast quadrant was excavated to a depth of 7 cm, but artifacts were only found just under the sod layer. This feature has been interpreted as a shallow dump and trash accumulation, but since it contained a number of tar paper tacks, below the surface, the dumped material probably was deposited after the Joso construction camp buildings had been removed.

F260/3

F260/3 was a small, 1 m-diameter depression in grid square 100N/260E. One can was visible on the surface. In a manner similar to that employed for F140/2, this feature was excavated to a depth of 30 cm and produced only a few artifacts; one a fragment of a baking powder can. The dark appearance and loose consolidation of the soil were most likely caused by rodent disturbance.

F260/4

F260/4 was located in grid square 60N/260E. It was approximately 1 m square, with glass, metal, and ceramic visible on the surface. On the south side of the depression was a straight wall approximately 5 cm deep, but what relationship, if any, this had to the depression could not be ascertained. The depression was some 40 cm deep, with artifacts scattered throughout; hardpan formed the bottom. In the northwest corner of the excavated area, outside the depression, was a wood-filled posthole, some 10 cm in diameter and 50 cm deep. This was probably the remains of a fence post which was placed here sometime after the construction camp, since no fence lines are visible in the early photograph (Fig. 1). Marked artifacts included ceramics from the Edwin M. Knowles China Co. of West Virginia and Ohio, founded in 1900. An unusual find was what appeared to be half of a diamond-shaped gilt locket. The combination of artifacts from this feature was intriguing, for, besides the locket, there were fragments of pressed glass and bottle caps with cork liners. At the moment both the purpose and date of this feature are unknown, since any explanation of it must take its variety of artifacts into account.

F260/5

F260/5 was a gully-type depression in grid square 90N/260E, with cans in and nearby. About 1.3 m wide, its length was indeterminate. Excavation revealed that the underlying soil was "laminated" in very thin layers, possibly indicating extensive foot traffic, and leading to the conclusion that this feature was merely a portion of one of the many cow paths which criss-crossed the site.

F260/6

F260/6, in grid square 80N/260E, was a small depression, about 50 cm in diameter, containing wire. Excavation yielded only a few can and wood fragments, with no evidence to indicate that this feature had ever served any purpose.

F260/7

F260/7 was a 1 m^2 depression with glass and metal nearby. It was similar in appearance and location (60N/260E) to F260/4, discussed above. Its purpose, if any, is also unknown, as is any relationship to F260/4.

F260/8

F260/8, in grid square 120N/260E, was a circular depression slightly over 1 m in diameter. Probing revealed that the feature contained soft dirt and cans, and excavation produced more cans, a serving spoon, and a fragment of a blasting cap. The soil changed from soft to hard-packed, but still contained a few artifacts to a depth of 50 cm. This feature, like

F250/1, was very close to the southern bank of the earthen canal. Window glass and nails, near the bottom of the feature, suggest that it is a disturbance of rather modern origin but beyond that its purpose is unknown.

F270/1

F270/1 was a depression approximately 1 m in diameter, in grid square 130N/270E, identified by WSU as their HF-42. It contained a number of cans, but little else, and was probably associated with the construction camp as a one-time burial of accumulated kitchen rubbish. A nearby depression, F270/1A, was also excavated, and produced can and glass fragments, and a ca. 1925-35 automobile directional map light covering. The presence of a plastic bread wrapper, and the sun-colored amethyst tint of the glass fragments, would indicate that this subfeature was dug and filled relatively recently.

F270/2

F270/2 was an area of scattered rubbish in grid square 130N/270E. Following surface collection the feature was skim-shovelled to a depth of 5 cm. No artifacts were visible below the surface. Probing indicated that F270/2 was a surface scatter only; the number of cans and can fragments present would point to deposition by construction camp personnel.

F270/3

F270/3, in grid square 130N/270E, was a small depression with a bottle base showing on the surface. Upon excavation a recent "MJB" coffee can was found at a depth of approximately 30 cm, with earlier historic material in the fill above it. Why such a hole was dug in the recent past remains a mystery.

F270/4

F270/4 was an area of burning, with glass and cinders, measuring some 7 m north-south by 8 m east-west, located in grid square 110N/270E. Two depressions in the southeast quadrant were excavated separately. One of these was only 15 cm deep while the other was 30-50 cm deep and contained a greater concentration of cultural material. Because the feature as a whole produced an interesting array of artifacts of a personal nature, among them bottle caps, beer bottles, tobacco cans, and clothing hardware, it has been tentatively identified as a social or recreational area for the construction camp, and was perhaps also used for dumping. Marked artifacts included a sardine can from Norway, labelled "NORVEGE," a buckle embossed "Headlight," and overall buttons imprinted "Black Bear Brand" and "CSCo." Here was found the second child's plaything, the iron barrel from a toy gun.

F270/5

F270/5 was a large, deep depression measuring some 8 m in diameter, in grid square 100 N/270E, WSU's HF-36. It had accumulated a few stove parts, glass, and other artifacts. The depression was excavated to a depth of 5 cm, and produced only one glass fragment and a flattened "76" aluminum oil can. While the purpose of this large depression is not known, it is believed, from its proximity to other features, notably F270/6, to be somehow associated with the mess hall for the construction camp, perhaps an underground storage area or root cellar. Both it and the feature immediately following are in the approximate area of No. 14 in the early photograph (Fig. 1).

F270/6

F270/6 was a circular, 4 m-diameter depression, with some bone showing, in grid square 100N/270E. On excavation it was found to contain over 500 bones and bone fragments, which comprised 62% of the total number of artifacts recovered from this feature. Since most of this bone was cow, and had been sawn, this feature can therefore be ascribed to the mess hall/kitchen area. An interview with Mrs. Louise Jaussaud established the fact that her father-in-law, Leon Jaussaud, was "the supplier of beef (and probably mutton since sheep raising was his speciality) to the construction camp mess hall" (R. Sprague 1980:72). Related artifacts included a number of sherds of plain white earthenware, some marked "ALFRED MEAKIN ENGLAND," which would date, approximately, 1891-1897 (Godden 1964:425-426).

This feature, like F250/1 discussed earlier, bore external signs of having been previously disturbed. An upcast of material surrounded it, extending for nearly 1 m beyond the limits of the depression itself. This disturbance was further confirmed by the fact that saucer fragments from three separately-excavated stratigraphic layers could be cross-mended.

F270/7

F270/7, located in grid squares 60N/270-280E, was identified as a trash scatter composed mainly of parts of a single stove. Glass, cinders, and coal were also visible on the surface, as was a WSU test unit; this was their HF-33. Following surface collection a rectangular area in the southeast quadrant of the feature was excavated to a depth of 3 cm. Artifacts recovered, including many fragments of beer bottles and abundant coal and cinders, helped confirm this feature as a dump for stove ash and miscellaneous rubbish. Unfortunately, it was not possible to tell whether the coal and cinders were associated with the stove which was F270/7's major artifact. We cannot comment on the WSU findings since their test unit, although pictured on their plan (Cleveland 1980:97) is not discussed in their report.

F270/8

F270/8 was located in grid square 120N/270E. It consisted of a squarish depression with sloping sides having a maximum measurement of 2 m on a side. A can was visible at the bottom of the depression. The feature, which was excavated to a depth of 25 cm, produced only a few artifacts which, although roughly contemporary with the construction camp in date, shed no light on the purpose of F270/8. It is doubtful that this feature was a purposely-dug pit for trash dumping, and it is just possible that it too was a recent product of pothunter zeal, for it seemed to have an upcast of material at the sides. F270/8 was also WSU's HF-44.

F270/9

F270/9, which was WSU's HF-41, was located in grid square 130N/270E. It was a small oval depression near the center of an artifact scatter some 3 m in diameter. While no artifacts were visible on the surface, an object was detected with the probe, but upon skim-shovelling to determine the perimeter of the feature, no artifacts were found below a depth of 3 cm. This light scatter of material can best be interpreted as a gradual accumulation of no intrinsic importance.

F280/1

F280/1, in grid squares 130N/270-280E, was a 5 x 6 m area of uneven ground with heavy charcoal deposits, and with few artifacts visible on the surface; it was WSU's HF-43. The excavators found that the charcoal and burned items were concentrated in the center of the feature, while the glass and metal were located primarily on the periphery. Because there was burned earth present in this deposit, it can be interpreted that F280/1 was either an area of deliberate in situ burning, or was a place where red-hot coal ash was repeatedly deposited.

F280/2

F280/2 was located in grid square 90N/280E, and was an area of burning with scattered cinders and pottery. Once the surface was cleared from around this area the outline of a pit was revealed, some 60 cm in diameter. The pit fill was mainly a mixture of coal, cinders, and light, pumice-like material, with scattered artifacts. A post-hole digger was finally used to find the bottom of this feature, which was 1.1 m deep. Marked objects below the surface which could help date F280/2 included ceramic sherds from Homer Laughlin China Co., Edwin M. Knowles China Co., and W. S. George Pottery Co. This latter firm is the most recent of the three, having begun in 1909 (Lehner 1980:60). A tentative interpretation of this feature is that it was a hole dug to receive kitchen stove ashes from the construction camp.

F280/3

F280/3 was a scatter of wood plus a few metal artifacts surrounded by an area of cinders. This feature was located in grid square 100N/280E, just to the northeast of F280/2. About 6 cm below the surface was a layer of cinders some 4 cm thick, overlying fine brown sand. Since the wood was found at some distance from the main cinder concentration, it is not thought to be associated with it. The other artifacts, mainly glass and ceramic, were found on top of the cinder layer, which would suggest that the area was used initially for depositing stove ash, and subsequently accumulated other rubbish on top. It is further suggested that this ash accumulation was the result of cook stoves being cleaned out, for the area is very near that already identified as a mess hall/kitchen area. Had the cinders resulted from blacksmithing activity, some associated worked metal or slag would have been expected, but none was observed.

F280/4

F280/4 was a 1 m^2 depression in grid square 90N/280E, with a similar depression just to the southeast. Following surface collection this feature was cross-sectioned to remove the surface soil. As only a few artifacts were recovered below the surface it was decided not to continue further here. Besides sherds from several bottles, this feature also yielded a fragment of a clay tobacco pipe and several pieces of clothing hardware, including garters, a suspender part, and an overall button inscribed "Oakland Co-op Cal." This feature has been tentatively identified as an area for the construction crew members to congregate and socialize, perhaps before going in to meals.

F280/5

F280/5, in grid square 90N/280E, was similar in size and grid square location to F280/4, except that it had a lot of sawn wood on the surface; it was WSU's HF-35. During cross-sectioning to determine its perimeter, so few artifacts were located that the feature was not excavated further, and is presumed to be merely a general surface scatter over an existing depression. The sawn wood and a couple of tar paper tack grommets probably came from the dismantled construction camp buildings.

F280/6

F280/6 was a scatter of dumped material north of the dunes, in grid square 200N/280E. It consisted of items which could easily have come from the construction camp, such as hole-in-top cans and a stove lid, as well as artifacts of much more recent date. The slight amount of material recovered, and the fact that it did not extend below the surface, would indicate that it was not used as a dump on a regular basis.

F290/1

F290/1, in grid squares 50-60N/290E, was a shallow 4 x 5 m depression containing cinders and clinkers. Small areas in the southwest and northeast quadrants were excavated to depths of 9 cm and 12 cm respectively, and found to have much burned material. The northeast quadrant contained soil discolored by fire as well as numerous glass fragments, particularly from beer bottles, and metal artifacts, including several personal items, such as a bottle opener, buttons, and portions of a briar pipe. One of the buttons had a picture of a bear on it, possibly representing "Black Bear Brand," and the briar pipe's brass shank cap was stamped " " for Wm. Demuth & Co., of New York, importers of smokers' articles (Demuth 1878). While this area may simply have been a rubbish dump, it is equally possible that it was an outdoor social/recreational area which had a campfire as its central focus.

F290/2

F290/2, WSU's HF-32, was a scatter of wood fragments with nearby depressions in grid square 70N/290E, measuring 5.8 x 7.8 m in area. Following surface collection, the feature was cross-sectioned and subsequently the southwest quadrant was excavated since it was here that the greatest concentration of material appeared (Fig. 4). Although its maximum depth was 30 cm, it was very shallow in most places. The many objects of architectural function recovered would indicate that some of this accumulation occurred following the removal of the construction camp buildings, but from the abundance of glass, ceramic, and burned material we can conclude that it was previously used as a dumping area.

F290/3

F290/3 was a scatter of burnt material with ceramics and glass in grid squares 80-90N/290E, which measured approximately 7.2 x 11.7 m. Following surface collection and cross-sectioning, the northeast quadrant was excavated; the thin artifact layer was composed mostly of ceramic tableware and glass, particularly beer bottle fragments. Some ceramic sherds were marked with "ALFRED MEAKIN ENGLAND" and were similar to those already noted from F290/6; the presence of bone and the proximity of this feature to the mess hall/kitchen area would both tend to suggest that it, too, was a related dumping area.

F290/4

F290/4, WSU's HF-45, was located in grid squares 120-130N/290E, and consisted of a number of concrete pieces on the surface, together with some wood. Since the WSU archaeologists had suggested (Cleveland 1980:104) that the concrete might represent "a more permanent fireplace facility possibly

with a chimney," the concrete was removed once the area was surface-collected and cross-sectioned. It then became apparent that the concrete was much later than the construction camp, and in fact was resting on a construction camp deposit composed of burned material in which was a concentration of bottle caps and common nails ranging in size from 6d to 10d. This is turn was surrounded by a light scatter of glass. Other artifacts recovered included a comb and a reed plate from a harmonica, and the character of the total assemblage suggests that here was another social/recreational gathering place, perhaps around a campfire.

F290/5

F290/5 was a slight depression with some glass on the surface, located in grid squares 120N/290-300E. It seemed to be virtually continuous with F300/6, just to the east. The feature was surface-collected and cross-sectioned, and the bottle caps and bottle fragments recovered indicated that F290/5 began as a construction camp dump. Following the removal of the camp buildings, some tar paper tacks and grommets found their way here as did some stove parts. Decorated ceramics, possibly from Perry Station, also occurred here; one sherd could be cross-mended with another from F310/1.

F290/6

F290/6, in grid square 150N/290E, was a depression containing three visible artifacts, including a crushed sheet metal stove. Following surface collection the feature was cross-sectioned, but no more material was found. Cast lettering on the stove, "O R &...," probably stood for Oregon Railroad and Navigation Company, one of the companies which was consolidated into the Oregon-Washington Railroad & Navigation Company in 1906 (R. Sprague 1980:67). This stove may well have been in use by the construction camp, and was simply abandoned here once the camp was dismantled; it may also date from later railroad use.

F290/7

F290/7, in grid square 160N/290E, consisted of two nearby depressions, numbered individually "A" and "B," with a few cans visible on the surface. F290/7A was excavated to approximately 50 cm, but was abandoned when it became apparent that this was most probably the location of a previous backhoe test or pothunter's pit. F290/7B was excavated to a depth of 35 cm with only a few scattered artifacts resulting, giving no indication of any particular association with the Joso construction camp.

F300/1

F300/1 was also WSU's HF-31, and was located in grid squares 70-80N/300E. It was an oval depression measuring 6 m north-south by 8 m east-west, and was 1.5 m deep in the center, where most of the cultural

debris was contained. A black charcoal lens, at a maximum depth of 30 cm, contained all the artifacts recovered. This feature has been tentatively identified as the cellar for structure No. 20 in the early photograph (Fig. 1) which has what may be a sloping cellar entrance barely visible on the right side of the building.

F300/2

F300/2 was a scatter of wood and artifacts with nearby depressions, located in grid squares 80N/290-300E. The area was very ashy, with many coal fragments, and reached a maximum depth of 20 cm in places. Because of its proximity to F300/1 it was possibly a place were the stove ash from the building associated with that feature was dumped. It may also have functioned as a recreational area, judging from the number of beer bottle fragments and bottle caps recovered. Sherds from a stoneware ink bottle were also found here, perhaps indicating that the nearby building may have served, at least in part, as an office.

F300/3

F300/3, in grid squares 130N/290-300E, was an area of scattered wood and small depressions. It was cross-sectioned to determine its perimeter and was found to contain concentrations of burned coal as much as 20 cm deep; one of the depressions contained material to a depth of 60 cm. Glass fragments comprised some 72% of the excavated artifacts, and those, along with a bottle opener stamped "WALLA W...A BRW'G CO," a button, and a piece of suspender hardware point to this area as a possible extension of the campfire/socialization area, F290/4, immediately adjacent.

F300/4

F300/4 was also an area of scattered wood with nearby depressions, this time in grid squares 80N/300-310E. Because we hoped that this might be the location of one or more privies, the feature was excavated in a manner similar to that described for F140/2. Probing of the depressions yielded very few artifacts, among them an overall-button stamped "RIP PROOF," and a fragment of the stoneware ink bottle from F300/2. The pieces of wood recovered were probably broken battens remaining from the dismantling of the construction camp buildings. This feature, because of its proximity to F300/2, is perhaps an extension of it.

F300/5

F300/5 was an area of scattered wood, one rectangular depression, and several small round ones, mainly in grid square 60N/300E. Several of the depressions contained concentrations of coal and charcoal, and it would

appear that this area may have been used for casual dumping of stove cinders and light trash. Marked artifacts included a sardine can stamped "NORVEGE" and a beer bottle embossed "AB " on the base. While some authorities (Arthur Woodward 1963:personal communication to R. Sprague) believe this mark stands for the Anheuser-Busch Brewing Association, others feel it represents the Adolphus Busch Glass Manufacturing Co. and was used "circa 1904 to 1907" (Toulouse 1971:26). Any one of three factors may explain why these dates do not coincide with those of the Joso Bridge construction. The first is, that this bottle was left by earlier visitors to the area. That can be discounted because too many other such bottles were found in the various features, particularly ones which are definitely associated with construction camp-related activities. The second is, that these bottles were back stock, coming onto the market some 4-10 years after manufacture; this is possible but also not probable given the quantities involved. A more plausible explanation for the descrepancy in dates is that Toulouse's "circa 1904 to 1907" is too early. The Adolphus Busch Glass Manufacturing Co. had two plants, one in Belleville, Ill., and the other in St. Louis, Mo. In 1905, the company merged with others to form the American Bottle Co., of Chicago, Illinois, which used the mark "AB Co" from 1905-1916. The St. Louis plant, which was not included in this merger, continued to operate until 1928; beer bottles made both for Busch's Anheuser-Busch brewery and for others were important products of this factory (Toulouse 1971:26-27). Since the "AB" mark was used from at least 1904 to at least 1907, there is every reason to think that it may have been used even longer than that.

F300/6

F300/6 was an oval depression some 1.25 m east-west by 2.25 m north-south in grid square 130N/300E. Although this was identified as a separate feature, it is close enough to F290/4 and F300/3 to be included in a general recreational area. Alcoholic beverage bottle fragments, bottle caps, a bottle opener, a tobacco can fragment, and pieces of one-sided phonograph records all support this interpretation. Although double-faced records were introduced in 1907 (Warp 1978:232), "disc records" for "talking machines" were still available for 21 cents each in 1908 (Schroeder 1969:198).

F300/7

F300/7 was also WSU's HF-12, and was a depression located in grid squares 100S/300-310E. A test unit, 0.6 x 1.4 m, had been placed here by WSU, and they concluded that the feature was a "privy pit that was used for occasional refuse dumping, aside from its sanitation toilet function" (Cleveland 1980:116). Up until the time this feature was excavated, we had located no privies ourselves. Since we were interested in seeing what one might have looked like, we re-excavated this one, and arrived at the same conclusion reached by the WSU excavators (Cleveland 1980:106, 113, 114). Additionally, measurements scaled off along the river frontage, based upon the distance between the legs of the towers, indicated that this privy was

the same one identified as structure No. 4 in the early photograph (Fig. 1). Analysis of a sample of soil from near the bottom of F300/7 confirmed its identification as a privy (Table 3). Some of the ceramics from the upper levels of this feature are decidedly fancy and include hand-painted and gilded Japanese porcelain. Baling wire and wood lath fragments found in the privy indicate that it was filled in after the construction camp buildings were removed; the artifacts found at higher levels were no doubt originally part of the surrounding ground surface which was used to level out the hole. In addition, burned timbers on the surface and burned matter on the fecal deposit itself both provided evidence that the privy structure might have been burned. The building could have partly collapsed into the hole which was subsequently filled up.

F310/1

F310/1 was an area of scattered glass, wood, cans, and other metal in grid square 150N/310E; it was also WSU's HF-73. They had placed a "test unit" approximately 0.5 x 3.5 m across it (Cleveland 1980 :10), and concluded that it was a dump with "a broad spectrum of household related items suggesting association with the habitation structures in the camp" (Cleveland 1980:116). Our excavations there, while more extensive, confirmed their basic findings, but, in addition, we were able to establish that this trash dump was begun by filling in a natural narrow, shallow gully running northwest-southeast, reaching a maximum depth in places of 40 cm. A selection of the marked artifacts includes a beer bottle fragment embossed "[R]anier," others embossed "AB," discussed earlier, and whiskey bottle fragments with the intertwined B & L logo for Bertin and Lipori, also previously mentioned. One overall button bore the legend "RIP PROOF," a drinking glass had an embossed horseshoe on the base, and a possible lid from an unidentified can was stamped "ASIRONA II." While the entire assemblage is similar in some ways to those described from social/ recreational areas, the distance of this feature from the complex of camp buildings would seem to preclude its use as a gathering place, were it not for the fact that a ceramic sherd from this feature cross-mends with one from F290/5.

F310/2

F310/2 was an area of depressions with scattered cinders, wood, and glass, in grid square 80N/310E. Following surface collection and cross-sectioning to establish the perimeter of the scatter, the southwest quadrant was excavated to 10-15 cm. The feature, below the surface, consisted of a thin, uneven layer of heavily-concentrated ash and charcoal, and included abundant glass, nails, and bottle caps. The latter were especially prolific, comprising nearly 16% of the feature's total artifact sample; 6 bottle openers, in 3 different styles, were also present. In addition, buttons, a poker chip fragment, and Prince Albert tobacco and Copenhagen snuff can parts were all found amidst the deposit. While this

feature may simply have been a dump for stove cinders, ash, and rubbish, it is also very possible that it was a gathering area for drinking and socializing. The numerous wire nails found may have come from boxes being burned for firewood.

F310/3

F310/3 was an area of scattered cinders, with associated depressions, containing much glass, wood, and metal on the surface. Following cross-sectioning, portions of each quadrant were excavated, and the artifacts were found to concentrate in the southern half. While the southwest quadrant yielded three coins, described below, near the surface, it was the southeast quadrant which produced the majority of artifacts, so efforts were concentrated there. At a depth of 20 cm the outline of a pit, measuring some 1 x 2 m, was revealed on the bottom of the excavated area. This pit continued in depth for another 10 cm, and contained material in the bottom which indicated that it might have been a privy at one time, although no such structure is visible at this location in Fig. 1. Soil analysis (Table 3) confirmed that F310/3 was not a privy, and indeed, we would not have expected one to be quite that shallow; a garbage pit is a more likely interpretation here.

All told, this feature yielded six coins, as follows: an 1889 Indian Head cent; 1897, 1902, and 1909S Barber dimes; a 1907 Liberty Head half dollar; and an 1897 Liberty Head dollar. There were a few additional artifacts worth mentioning. Fragments of a Lash's Kidney and Liver Bitters bottle would date 1894-1905 (Wilson and Wilson 1969:44) but this early date might be explained by extra stock on hand in the store from which it was purchased, or re-use of the bottle. Portions of a drinking glass had frosted embossing with the words "North Yakima Brewing and Malting Co." This company, in Yakima, Washington, was in business from 1909 through 1916 (Frances Hare 1981:personal communication) and is of especial interest since the Eschbach-Bruce company of North Yakima was awarded a contract for constructing Section 4 of the Spokane-Ayer cutoff, the 7 mi. stretch through the Palouse Canyon (*Kennewick Reporter* 1911). Of the remaining artifacts, a few wine bottle fragments were excavated and, in addition, 627 beer bottle caps were unearthed, or about 15% of the entire artifact total from this feature. Small pocket tools, particularly 29 bottle openers, point to this feature as a gathering place for drinking, especially beer.

F310/4

F310/4 was a surface scatter of wood fragments in grid squares 90-100N/310E, and one depression was visible in the area. With the thought that this might be the location of another privy, the area was investigated as described for F140/2, but no further cultural material was found. The wood was probably left over from the dismantling of the construction camp.

F310/5

F310/5 was an area of three depressions mainly in grid square 70N/310E. Although no artifacts were visible on the surface, probing indicated that at least one of the depressions might contain metal objects. The depressions were numbered individually, "A," "B," and "C," and each was excavated as described for suspected privies such as F140/2. "A" produced the most artifacts, particularly glass, including fragments of a beer glass similar to that from F310/3, but in this depression were evidences of obvious rodent activity. Depression "B" contained ashy soil and several stove parts, and "B" and "C" both had much more clinker and coal than "A." Because these subfeatures were just east of F300/1, which has been interpreted as the cellar of a building, F310/5 may well have been an area used for the disposal of stove ash and other rubbish from that building.

F310/6

F310/6 is a ditch with parallel banks, the latter formed by casting the spoil to either side when the ditch was created. It is widest and deepest in the center of the site (perhaps 1 m x 50 cm), and curves around, north of most of the important features, tapering off to the east and west. This ditch was given the number HF-46 by the WSU excavation team, who suggested that it may have served to divert anticipated runoff, although their backhoe section across it gave no evidence that it had ever held water (Cleveland 1980:113). Because we wanted to determine whether it dated from the time of the construction camp, or was later, or possibly even earlier, a trench was put across it by hand. No cultural material was located more than 10 cm below the present ground surface, and the original ground surface was some 10 cm below that. Because there were no artifacts on the original ground surface, and also because the trench is not straight but curves around the major buildings, it seems likely that it was put in shortly after the buildings were erected, and was a response to the frequent cloudbursts experienced in the area.

F320/1

F320/1 was a circular depression some 2.5 m in diameter in grid square 160N/320E. Since a lid to a hole-in-top can was visible on the surface, the area was excavated to a depth of 30 cm, but no outline of a pit or other feature was discerned. Some ashy material was present, but few artifacts; the purpose of this feature, if any, could not be determined.

F320/2

F320/2, in grid square 90N/320E, was a scatter of glass, ceramic, and metal, with two nearby depressions. The material covered an area approximately 4.5 m north-south, by 5 m east-west. Following surface collection the feature was cross-sectioned but since few artifacts were present in the sod layer, with none below that, it was concluded that the surface scatter was simply that.

F330/1

F330/1 was a depression with a surrounding scatter of wood, in grid square 170N/330E. The depression itself measured 1.3 m north-south by 1.4 m east-west. In case it might have been a privy, it was excavated accordingly, but turned out to be simply a depression which had gradually filled in with dirt and a few accumulated artifacts. The wood remains were probably battens left from the dismantling of the construction camp.

F330/2

F330/2, in grid square 90N/330E, was a depression with nearby cans. Once the sod was removed, there was no further indication of a pit, yet the soil was mottled, and approximately 20 cm down a few artifacts were recovered. As these included fragments of tar paper and a tar paper tack with grommet, it would seem probable that this depression was filled in following the dismantling of the construction camp buildings. While the significance of the mottled soil is not known, this feature bears a strong resemblance to at least two others, F260/8 and F270/8, each of which also had no pit outline, but which produced a few scattered artifacts below a 10-20 cm thick soil layer.

F330/3

F330/3 was also located in grid square 90N/330E, just to the east of F330/2. It was a smaller circular depression some 30 cm in diameter which was excavated to a depth of 15 cm. A piece of leather was the only item recovered at that depth. The excavators reported that the feature contained a 5 cm diameter hole, probably a rodent tunnel, which held organic matter.

F330/4 and F330/5

F330/4 and F330/5 were both depressions located in grid square 100N/330E. Since probing detected possible artifacts they were excavated as described for F140/2, but were found to contain only coal and clinker fragments, probably stove refuse dumped here to level up the ground. They are associated, on the basis of proximity, with the construction camp.

F340/1

F340/1 was an oval depression measuring 2 x 3.5 m in grid square 170N/340E. Scattered cinders were visible on the surface, as were a few ceramic sherds; a smaller depression was located just to the west. There was little cultural material below the surface, and the purpose of this feature, if any, remains unknown.

F340/2

F340/2, in grid square 100N/340E, was composed of two small depressions with a few pieces of glass and wood nearby. The larger pit measured 1.3 x 1.4 m, and the smaller was 50 x 60 cm across; both were 15 cm deep. Following surface collection the feature was cross-trenched but no further cultural material was found.

F350/1

F350/1, WSU's HF-30, was a 1.4 x 2 m depression in grid square 90N/350E. As it contained some glass and metal, the southwest quadrant was excavated following cross-trenching. A few artifacts were recovered as far down as 25 cm, but most were very near the surface. Marked items included parts of a bitters bottle, brand unknown; a Gordon's Gin bottle; and a "Boss of the Road" overall button with an embossed bulldog's head. The amount and kind of artifacts recovered would indicate that this feature was used primarily for disposing of bottle glass.

F350/2

F350/2, in grid square 90N/350E, was a small depression measuring approximately 60 cm in diameter. It was excavated at the same time as F350/1 because it was only 30 cm to the northwest of that feature, but was given a separate feature number since it too contained glass and cans. It was excavated to a depth of 25 cm; probing below that revealed that no further cultural material was likely to be present. It is interpreted as being similar in purpose to F350/1.

F350/3

F350/3 was an area of cinders with glass, ceramic, and metal artifacts located in grid square 160N/350E. In area it measured some 3.4 x 4.1 m and blended with F350/4 to the northeast and F360/1 to the east. The boundary between these three features is somewhat arbitrary, and suggested by a gradual lessening of cinders, which were heavily concentrated in the center of F350/3. Because of the proximity of this feature to the construction camp buildings and because of the artifacts recovered from it (cans and bottle glass) it would appear that this feature was a camp dump for stove ash and other refuse. However, in the southwest quadrant, below the surface, the excavators found two sherds of an earthenware plate with a distinctive gold flower design. Sherds with this same design were found in F120/1, a feature which has been identified as a Perry Station dumping area. Although all the sherds appear to come from the same vessel, they cannot be cross-mended, and we are left with the question of how they came to be dumped in F350/3. While this is an area which is a bit far from

Perry Station for convenience, it is still not likely that the same pattern was in use at both Perry Station and at the construction camp. In the early 1900s ceramics were more frequently obtained as single pieces rather than as sets, so it would be unusual, on a site of this period, to have the same pattern on two or more separate vessels from an individual family (Gaw 1975:171) let alone on vessels from two separate groups.

F350/4

F350/4 was a depression containing metal and cut bone located in grid square 170N/350E. It was approximately 1 m in diameter and was very close to the boundary of F350/3. Upon excavation, however, few artifacts were recovered, one being a modern pull-tab can some 3 cm below the surface. This feature had therefore been disturbed, at least superficially, and its relationship, if any, to F350/3 could not be determined.

F360/1

F360/1 was a surface scatter of cans, wood, glass, and metal in grid squares 200N/350-370E; several small depressions were also located here. The excavators noted that the cans were concentrated in the western half, near F350/3, although they did not extend below 20 cm deep. Four depressions were also investigated to depths ranging from 30-35 cm. Because of the large number of cans, this area has been identified as a construction camp can dump. With this in mind, however, it is somewhat difficult to explain the finding of a twisted-spring carpet beater here, since that would imply the presence of a carpet at the construction camp. Although that is certainly possible, it does seem somewhat unlikely, unless we look for the carpet in the home of one of the foremen, particularly one whose wife and family might have accompanied him to the job site. Alternatively, the Perry Station dwelling may have had carpets, and this seems to be the most likely explanation, particularly since the adjacent feature, F350/3, produced ceramics which are almost certainly from Perry Station since they are identical in pattern to some from F120/1.

F360/2

F360/2, located in grid squares 200N/350-370E, was a large can dump containing mainly medium and large hole-in-top cans. This feature, which we surface-collected but did not excavate, was also WSU's HF-27, and results of the test trench they put in here (Cleveland 1980:108-109, 116) showed that it was a surface feature only. They identified the smaller cans as "condensed milk" and the larger ones as "coffee," and because some of the smaller ones were stuffed into the larger ones, they concluded that "this uniformity of association is related to regular coffee breaks by the workers" (Cleveland 1980:109). We would tend to discount this interpretation, however, since the "coffee break" is a phenomenon of more recent times; ironworkers did not have regularly-scheduled ones until the 1960s (Edgar C. Bryan 1981:personal communication).

F360/3

F360/3 was a scatter of glass and wood fragments in grid square 90N/360E, measuring approximately 3 x 3.5 m. It was no more than 6 cm deep and contained no depressions but did have some burned coal and a few artifacts of particular interest. One brass suspender part was embossed "Bull Dog," and a piece of frosted glass was part of a North Yakima Brewing and Malting Co. drinking glass. One stoneware sherd had letters spelling a portion of the word "STARBUCK." This sherd is probably from a crock advertising the grocery store from which it came, and probably once contained pickles (Mr. and Mrs. James Johnson 1980:personal communication). The feature itself was probably a shallow dump for the construction camp.

F370/1

F370/1 was a slight scatter of cans in grid squares 160-170N/370E which, when cross-sectioned, produced nothing below the surface. Because of its proximity to F360/1, just to the west, it is probably not in fact a separate feature, but just a scatter of cans and other material which has spilled over from that dump.

F370/2

F370/2 was a depression just over 50 cm in diameter located in grid square 90N/370E. Upon excavation it was found that no artifacts occurred below the surface, but within the feature area there was a circular outline approximately 25 cm in diameter which contained some decayed wood. This was probably a post hole with the remains of a fence post.

F370/3

F370/3, in grid square 160S/370E, was a cinder mound containing a small depression with associated glass. This feature was near the river, in an area where it was thought that the foremen's dwellings had been located (Fig. 1). It was hoped that the depression might represent a filled-in privy, but such was not the case, for the cinder deposit was no deeper than 10 cm. Among the artifacts recovered were a number of nails and a few stove parts, perhaps indicating that portions of the deposit had been added to after the buildings along the river had been removed. Mainly, though, it was felt to be a dumping place for stove ashes from one of the riverfront houses.

F590/1

F590/1, while not within the actual boundaries of the raceway itself, was still close to other areas of proposed construction. Located mainly in grid squares 190N/590-600E, this feature was a scatter of cans, mostly

hole-in-top, located in the bottom of a stream bed. As many of these cans were in excellent condition, a surface collection was made in the area to obtain a sample of the various kinds represented. Although the cans are similar in type to those recovered from construction camp dumping contexts, this area is a bit far removed from the camp structures for dumping convenience, and may represent dumping practices by yet another group otherwise unaccounted for on the site. For example, the Union Pacific's Joso Station section house was formerly located up the hill to the east. While the dates it was in operation are not known, its occupants may have been the ones responsible for dumping in the stream bed.

CONCLUSIONS

Introduction

The 89 features which were investigated were found to belong to one or more of three identifiable categories. These were the Joso construction camp, the supervisory personnel dwellings, and Perry Station. In addition, a number of features, most of them insignificant in both composition and artifactual material, were not assigned to any one of the three groups.

Various criteria were applied to each feature to determine which group had created or used it. These criteria were: artifact date, artifact type, and location or proximity. Artifact dates were the first factor to be considered. In cases where these were later than 1914, the features concerned could not have been used by the construction camp personnel, unless, as was the case with several features, earlier material was found at a greater depth. Taken together, this would indicate primary use by the construction camp, and later use by others, particularly Perry Station.

Artifact type was also useful in establishing the origin and use of certain features, for example, the finding of bed parts in one area of the site led to its identification as the bunkhouse, and a large amount of sawn bone in another location similarly indicated that the mess hall and kitchen were nearby. In the absence of these more specific clues, location or proximity was sometimes helpful in deciding which group was closest to a particular feature, and would therefore have been most likely to have used it.

The Workmen

The criterion which was used most extensively was probably artifact type, since the artifacts are the things which can tell us the most about the people who were living and working at the Joso Bridge construction camp site. In particular, we have learned quite a bit about their personal habits. They drank a lot, especially beer, but also enjoyed wine, and whiskey, and gin to a lesser extent. Because of embossing on bottles or openers, and fragments of paper labels which remain, we know they patronized the Walla Walla Brewing Co. and Rainier for beer, Sunny Brook and Bertin & Lipori for whiskey, and Gordon's for gin. They played poker and smoked Velvet and Prince Albert tobacco in both briar and clay pipes. They hunted, or practiced shooting at targets or plinking at cans and bottles. They dosed themselves with Lash's Bitters and with Warner's Safe Kidney and Liver Remedy, and at least one person worried enough about falling hair to purchase a bottle of Knowlton's Danderine. Musical tastes included the harmonica, for parts of one were found; pieces of a broken record, grooved on one side only, point to the likely presence of a Victrola or other early phonograph.

What other musical instruments might have been present at the site is impossible to determine, for no fragments associated with any others were recovered. From oldtimers' recollections, however, one might expect one or more of the men to have had a banjo, guitar, Jew's harp, or possibly even a fiddle. For that reason, in recreating the quality of life on this, as on any other historic archaeological site, it is equally important to consider the artifacts that were *not* recovered as well as those that were. When accounting for imperishable materials, three reasons prevent them from being found in a particular archaeological context. The first is, that they did not exist during the time period of the site. Second, they may have existed, but were never owned by the people who lived there. Third, and most important, are those items which came onto the site with the original occupants, and then left when they did, in perfectly good and usable condition. Besides musical instruments, Joso examples would include the camera used by Mr. Fife to take his photographs, as well as the weapons of various caliber which were used to fire the many different kinds of shells and cartridges that were excavated.

Besides these items, which would have survived in the archaeological record but were not left behind to do so, we must also consider those items which do not survive. For example, we know that the Joso workmen smoked tobacco from cans and used "snoose." Contemporary newspapers and magazines tell us that they would also have been able to buy pipe tobacco in sacks, chewing tobacco in plugs, cigarettes, cigars, and powdered snuff for sniffing or dipping. While tobacco tags and powdered snuff cans would survive, we cannot say with certainty that there were any at Joso, but yet one cannot automatically assume that they were not there at all. Similarly, except for bones, and cans from which the labels are now gone, re-creation of food consumption is also greatly hampered by the lack of remains of perishable materials; grocery advertisements in newspapers and supply lists for railway locating parties (McHenry 1903:75; Beahan 1904:87-88; Lavis 1906:43) can give some idea of the variety of edibles that might be represented in construction camp fare.

Women and Children

We also now know, from the artifacts recovered, that both women and children were present at Joso. It is probable that the Perry Station section foreman had a wife, since the section boss's wife

> besides her maternal duties, did the cooking for both gangs. Her work . . . was often increased by the quartering . . . of the surface gang, a large roving detachment that worked sometimes on one section, sometimes on another, as their services might be required [Reinhardt 1970:210].

When wages were $1.50 - $2.00 per day, board might cost about $4.00 a week.

Women are represented by a hairpin, corset stays, and footwear; fancy ceramics can probably be attributed to them as well (Gaw 1975:173). Sherds of fancy Japanese-export ceramics found in one of the excavations near the river suggest that the wife of a Joso foreman or supervisor might also have been living there.

Besides being residents of the site it is also possible that women may have been present in other capacities; prostitutes, for example, are included in one author's "symbiotic and parasitic" types "usually associated with all stages of construction . . . who located themselves in or near the camps" (Buckles 1980:12). Women may also have visited the camp on Sundays to see the work in progress; early photographs taken elsewhere show that such visits did occur (Wheeler 1973:88-89). Women cooks were also another possibility, although in the early 1900s this employment seems to have been mainly confined to cooking for "thrashing" crews during harvest season (*Idahonian* 1981:15).

Yet another indication of the presence of women at Joso is provided by the occurrence of fragments of canning jars in some of the features. In 1914 there was still a great deal of housewife resistance to canned foods, particularly those fruits and vegetables which she could "put up" herself. Even though canneries were touted as "more sanitary than a dainty woman's kitchen" (Lee 1914:13), "swells," "leakers," and "rusties" (Lee 1914:75) were still a major problem, limiting purchase of canned goods, in general, to such groups as railroad survey crews (McHenry 1903:75; Beahan 1904:87-88; Lavis 1906:42-43) and others whose work kept them in the field away from home.

Children at Joso are represented by a porcelain doll's ear and the iron barrel from a toy gun. Although the children might have been only Sunday visitors, it is more likely that they resided there, perhaps as part of the Perry Station foreman's family, or as the family of one of the Joso supervisory personnel; washing, which looks like diapers, is visible on a line attached to the east side of structure No. 3 in Fig. 1.

Both toys were found in features (F250/2 and F270/4) which have been identified as recreation-socialization areas for the Joso work force. While we cannot yet explain their presence there, it is not hard to see how men, perhaps separated by necessity from their own families, might have made "pets" of the few children who were living in or near the camp.

Ethnic Groups

The artifacts recovered have so far provided only a little information about the ethnic groups which may have been represented at Joso. While section gangs were often composed of "young foreigners who could not speak English" (Reinhardt 1970:218), none of the Perry Station artifacts give any clues to whether this was in fact true for that group of people. The construction camp personnel also appear to have been fairly well assimilated into the work force. We assume that the ironworkers who erected the superstructure were members of Local 14, based in Spokane, which was chartered in 1902, and these highly-skilled individuals, who had to serve a four-year apprenticeship, would certainly have been able to speak English (Edgar C. Bryan 1981:personal communication). We would be more likely to find less-assimilated people among those construction work forces who "were commonly supplied by ethnic groups hired to do specific but menial tasks" (Buckles 1980:19), some of whom may have been present during the earlier stages of construction.

TABLE 4

Relationship of Investigated Features to Perry Station and to the Joso Bridge Construction Camp

Feature	Fig. 4 Designation	Association	Probable Purpose
F100/1	1	P	Trash accumulation
F100/2	2	P	Trash accumulation
F120/1	3	P	Household dump
F120/2	4	P	Trash accumulation
F120/3	5	P	Trash accumulation
F140/1	6	U	Trash accumulation
F140/2	7	U	Unknown; no artifacts
F160/1	8	U	Unknown; no artifacts
F160/2	9	J	Can dump
F170/1	10	P	Stove ash and household dump
F170/2	11	U	Trash accumulation
F180/1	12	J(12);P(R)	Cellar-type area for bunkhouse
F180/2	13	J	Minor trash dump
F190/1	14	J	Major can dump
F190/2	15	U	Unknown; modern
F190/3	16	U	Trash accumulation
F190/4	17	U	Trash accumulation
F200/1	18	U	Trash accumulation
F200/2	19	U	Trash accumulation
F230/1	20	J	Can dump
F230/2	21	U	Unknown; modern?
F240/1	22	U	Trash accumulation
F240/2	23	U	Trash accumulation
F240/3	24	J(13);P(R)	Double privy; major dump above
F250/1	25	J;P(R)	Major glass dump
F250/2	26	J;P(R)	Social/recreational area
F260/1	27	U	Unknown; modern?
F260/2	28	U	Trash accumulation
F260/3	29	U	Rodent disturbance
F260/4	30	U	Unknown
F260/5	31	U	Trash accumulation
F260/6	32	U	Trash accumulation
F260/7	33	U	Trash accumulation
F260/8	34	U	Unknown; modern?
F270/1	35	J	One-time can dump
F270/2	36	J	Can scatter
F270/3	37	U	Unknown; modern
F270/4	38	J	Social/recreational area
F270/5	39	J(14)	Cellar
F270/6	40	J	Major bone dump, north of (14)
F270/7	41	J	Trash scatter; stove dump
F270/8	42	U	Unknown; modern?
F270/9	43	U	Trash accumulation
F280/1	44	J	Stove ash dump, for (15,16,19)?
F280/2	45	J	Stove ash dump
F280/3	46	J	Major stove ash dump; N of (18)

TABLE 4 *continued*

Feature	Fig. 4 Designation	Association	Probable Purpose
F280/4	47	J	Social/recr. area; SE of (14)
F280/5	48	U	Trash accumulation
F280/6	49	U	Trash accumulation
F290/1	50	J	Social/recr. area; campfire?
F290/2	51	J	Minor dumping area
F290/3	52	J	Dumping area related to (14)
F290/4	53	J	Social/recr. area; campfire?
F290/5	54	J;P(R)	Minor dumping area
F290/6	55	J	Trash accumulation
F290/7	56	U	Trash accumulation
F300/1	57	J(20)	Cellar
F300/2	58	J	Stove ash dump; recr. area
F300/3	59	J	Extension of F290/4
F300/4	60	J	Extension of F300/2
F300/5	61	J	Stove ash and trash dump
F300/6	62	J	Extension of F290/4 and F300/3
F300/7	63	J(4)	Privy
F310/1	64	J;P(R)	Household dump
F310/2	65	J	Social/recreational area
F310/3	66	J	Social/recr. area; refuse pit
F310/4	67	U	Trash accumulation
F310/5	68	J	Stove ash dump
F310/6	69	J	Runoff ditch
F320/1	70	U	Unknown
F320/2	71	U	Trash accumulation
F330/1	72	U	Trash accumulation
F330/2	73	U	Unknown; modern?
F330/3	74	U	Unknown
F330/4	75	J	Stove ash dump
F330/5	76	J	Stove ash dump
F340/1	77	U	Trash accumulation
F340/2	78	U	Trash accumulation
F350/1	79	J	Minor glass dump
F350/2	80	J	Minor glass dump
F350/3	81	J;P(R)	Stove ash and trash dump
F350/4	82	U	Unknown; modern?
F360/1	83	J;P(R)	Can dump
F360/2	84	J	Major can dump
F360/3	85	J	Small can dump
F370/1	86	J	Extension of F360/1
F370/2	87	U	Post hole for fence post
F370/3	88	J(1)	Stove ash dump
F590/1	89	U	Major can dump

Key: J = Joso Bridge Construction Camp; (12) = Structure Number (from Fig. 1); P = Perry Station; (R) = Re-used; U = Unassigned.

It has been suggested by a retired ironworker that the divers mentioned by Mrs. Jaussaud were not "Negroes" but instead might have been Kanakas (Hawaiian Islanders) or people from other areas, such as Central America, who had extensive diving experience in their homelands (Edgar Bryan 1980:personal communication). No artifacts were recovered which were indicative of the presence of either Blacks or Kanakas at Joso, and indeed, the director of the 1974-75 Kanaka Village excavations at Fort Vancouver said that no artifacts had been found there, either, which would positively indicate the presence of Kanakas at that known Kanaka site (David Chance 1980:personal communication).

A few sherds of Chinese ceramics were recovered, but only enough to suggest that perhaps one or two Chinese people might have been living at Joso, possibly hired to do the laundry. The town of Starbuck, some 10 mi. away, had a Chinese laundry at the time; members of the Lee family might also have worked for the construction camp in that capacity. Although Japanese men were working for the railroad in nearby Dayton in 1912 (*Columbia Chronicle* 1912a:1), it has already been established that the Japanese-export ceramics found at Joso are less apt to indicate the presence of Japanese workmen there than they are indicative of the ceramic tastes of one of the resident women.

We know of no other specific ethnic group whose members were part of the Joso work force, with the possible exception of an Irishman, Paddy Creighton, who was one of two people knocked off the structure and drowned in September 1912 (*Columbia Chronicle* 1912b:3); because of the date, however, Creighton could not have been one of the ironworkers erecting the superstructure but was instead involved in some phase of substructure construction.

Documentary research has provided a few more names of people working either at Perry or at Joso, but like the Joso supervisory personnel their names give no real clues to their ethnic origins. Charles Morrison was working as a blacksmith at Perry in 1911 (*East Washingtonian* 1911b:1), L. A. McNaught hired out 31 mules for six weeks at almost 50 cents a day each (*East Washingtonian* 1911a:1), and Max B. Talcott, a civil engineer, was killed following a blast related to Joso Trestle construction (*Columbia Chronicle* 1911:3).

Structures

Of the 89 features which were investigated, 6 were found to relate to Perry Station, and an additional 8 were ones which could first be attributed to Joso, and then seem to have been re-used by Perry Station personnel at a later time. Forty-six features belonged to the construction camp, including 2 near the river, and a further 37 features, mostly minor, were not assigned to either Perry Station or the camp. Table 4 shows which features were associated with which area, relating them, where appropriate, to the building numbers from Fig. 1, and indicates the probable purpose of each.

From photographs taken within a few years after completion of the bridge we can be reasonably certain that the buildings which housed the construction camp work force were removed once the trestle was finished. Because of the presumed ephemeral nature of these buildings (no foundations, for example) and the short length of time they were in use ("ten and one half months," according to a letter from R. A. Fife to Mr. and Mrs. Turner of Starbuck), the excavation techniques employed in an archaeological salvage excavation cannot expect to recover as much in the way of building locations as a research excavation would have been able to do. Those which we have located with some degree of certainty have cellars associated with them. Others, which did not have cellars, are likely to be found in areas where no features occurred; that is, an area which was in the vicinity of the camp building complex, but which contained few if any artifacts, was probably once the location of a camp building.

Recommendations

With the exception of cellars, nothing visible remains to suggest that the Joso Bridge construction camp once existed here. For that reason, we recommend that the U.S. Army Corps of Engineers, Walla Walla district, proceed with their plans for construction of the Lyons Ferry Fish Hatchery. However, because the majority of significant features were located within the area of the three raceways included in the plans for the proposed hatchery (Fig. 6), we also recommend two additional courses of action. The first is, that funds be provided for archaeological monitoring during the major earth-moving phases of the project. Additionally, during other times when a monitor is not on site, we recommend that provisions be established to summon such a monitor to the site should conditions warrant. While the salvage operations conducted have yielded a great deal of important information, we cannot pretend that we have adequately covered so large a site in such a short period of time. Many questions remain to be answered. Other dumps and privies, not evident on the surface, surely still exist to be found by the earth-moving machinery, and may be the very ones to produce the evidence of ethnic identity which has so far eluded us.

We would also like to concur with Randall Schalk's recommendations for "the development of interpretive facilities for the archaeological resources of the Palouse Canyon vicinity" (Schalk 1980:187). Because the proposed fish hatchery is to offer a visitors' center facility, this would appear to be the ideal place to present such information. The nearby state park does not seem to have facilities for this, although it would be an alternative possibility, as long as efforts were not duplicated. We would also like to see the Joso Bridge included in Schalk's suggested archaeological district to be nominated to the National Register of Historic Places (Schalk 1980:188).

Further Research

During the course of this project a great deal has been learned about the construction of the trestle itself. Sprague and Wegars are presently researching this event in greater detail, and plan to present a definitive

Fig. 6. Plan of the proposed Lyons Ferry Fish Hatchery, showing the location of significant historic features within and near the raceway area.

report at a later date. We also hope to be able to untangle the conflicting relationships between the various contractors and subcontractors mentioned by informants and in newspaper accounts, to determine who was responsible for each phase of substructure and superstructure construction.

At present, a University of Idaho student has selected the Joso Bridge excavations as his project for a computer mapping class, and is producing plots showing the distribution of artifacts over the site. A Master's thesis is in progress on the cans, and a student volunteer is sorting and categorizing the glass. Various graduate students are undertaking analysis of the ceramics and cartridges, analyzing the faunal material, and doing metal cleaning and conservation. There are many other interesting projects which we hope students in future semesters will want to undertake. By drawing on the resources of the University community in this manner, we can extend the contract funds much farther than would otherwise be possible, thus ensuring that the public will indeed obtain a good return on its investment in us as interpreters of the past.

REFERENCES CITED

Adams, B. B., Jr.
1889 The Every-day Life of Railroad Men. In *The American Railway*, by Thomas Curtis Clarke and others, pp. 383-424. New York: Scribner's.

Adams, William H., Linda P. Gaw, and Frank C. Leonhardy
1975 Archaeological Excavations at Silcott, Washington: The Data Inventory. *Laboratory of Anthropology, Washington State University, Reports of Investigations*, No. 53. Pullman.

Alexander, E. P.
1889 Railway Management. In *The American Railway*, by Thomas Curtis Clarke and others, pp. 149-186. New York: Scribner's.

Barber, Edwin Atlee
1904 *Marks of American Potters*. Philadelphia: Patterson and White.

Beahan, Willard
1904 *The Field Practice of Railway Location*. New York: Engineering News Publishing Co.

Brand Names Foundation
1947 *43,000 Years of Public Service*. New York: Brand Names Foundation.

Buckles, William G.
1980 Models for Railroad Construction Related Camps in the West. Paper presented at the 13th Annual Meeting of the Society for Historical Archaeology, Albuquerque, New Mexico, 8-11 January 1980.

Clarke, Thomas Curtis
1889 The Building of a Railway. In *The American Railway*, by Thomas Curtis Clarke and others, pp. 1-46. New York: Scribner's.

Clarke, Thomas Curtis, and others
1889 *The American Railway; Its Construction, Development, Management, and Appliances*. New York: Scribner's. Reprinted 1976 by Arno Press, New York.

Cleveland, Gregory
1980 Archaeological Testing at "Trestle City," a Railroad Construction Camp of the Early 1900's. In "Cultural Resource Investigations for the Lyons Ferry Fish Hatchery Project, near Lyons Ferry, Washington," Randall F. Schalk, assembler, pp. 91-117. *Laboratory of Archaeology and History, Project Report*, No. 8. Pullman.

Columbia Chronicle
1911 34(16):3, 17 June. Dayton, Washington.

1912a "War Among the Japs," 35(92):1, 9 March. Dayton, Washington.

1912b "Body of Drowned Workman is Found," 35(50):3, 12 October. Dayton, Washington.

Dayton Chronicle
1980 "Historic Joso Bridge Area to be Excavated," 102(46):3, 13 November. Dayton, Washington.

Demuth, William and Co.
1878 *Illustrated Catalogue of Smokers' Articles and Show Figures Manufactured and Imported by Wm. Demuth & Co., 501 Broadway, New York.* New York: Wm. Demuth and Co.

East Washingtonian
1911a 30(81):1, 21 November. Pomeroy, Washington.

1911b "Word From an Old Timer," 30 (86):1, 9 December. Pomeroy, Washington.

1912 31(16):5, 6 April. Pomeroy, Washington.

Fontana, Bernard L., and J. Cameron Greenleaf
1962 Johnny Ward's Ranch: A Study in Historic Archaeology. *Kiva*, 28(1-2):1-115.

Garfield County Standard
1914 Home and Farm Magazine Section, 17 April, p. 7. Pomeroy, Washington.

Gaw, Linda P.
1975 The Availability and Selection of Ceramics in Silcott, Washington, 1900-1930. *Northwest Anthropological Research Notes*, 9(1):166-179.

Godden, Geoffrey A.
1964 *Encylopedia of British Pottery and Porcelain Marks.* New York: Bonanza Books.

Idahonian
1981 "Cookwagons," 25 February, p. 15. Moscow, Idaho.

Jones, Timothy W.
n.d. Boise Chinatown. In preparation. Moscow: Laboratory of Anthropology, University of Idaho.

Kennewick Reporter
1911 "Eschbach-Bruce Get Big Contract," 1 March. Kennewick, Washington.

Lavis, F.
1906 *Railroad Location Surveys and Estimates.* New York: Myron C. Clark

Lee, John A.
1914 *Canned Foods: How to Buy, How to Sell.* Baltimore: The Canning Trade.

Lehner, Lois
1980 *Complete Book of American Kitchen and Dinner Wares.* Des Moines: Wallace-Homestead.

McHenry, E. H.
1903 *Rules for Railway Location and Construction.* New York: Engineering News Publishing Co.

Montgomery Ward & Co.
1969 *Catalogue and Buyers' Guide No. 57, Spring and Summer 1895.* New York: Dover.

Periodical Publishers Association
1934 *Nationally Established Trade-Marks.* New York: Periodical Publishers Association.

Railway Age Gazette
1913 "Boarding Camps and the Labor Shortage," 54(25):1556, 20 June. Chicago.

1915 "Notable Structures on the Spokane-Ayer Cut-Off," 58(12);623-626, 19 March. Chicago.

Reinhardt, Richard, Editor
1970 *Workin' on the Railroad.* Palo Alto: American West Publishing Co.

Schalk, Randall F., Assembler
1980 Cultural Resource Investigations for the Lyons Ferry Fish Hatchery Project, near Lyons Ferry, Washington. *Laboratory of Archaeology and History, Project Report*, No. 8. Pullman.

Schroeder, Joseph J., Jr., Editor
1969 *Sears, Roebuck & Co. 1908 Catalogue No. 117.* Chicago: Gun Digest Co.

Sprague, Linda Ferguson
1980 San Juan Ceramics. Master's thesis, University of Idaho, Moscow.

Sprague, Roderick
1980 The Historic Background of the Joso Bridge Construction Camp. In "Cultural Resource Investigations for the Lyons Ferry Fish Hatchery Project, near Lyons Ferry, Washington," Randall F. Schalk, assembler, pp. 61-90. *Laboratory of Archaeology and History, Project Report*, No. 8. Pullman.

1981 A Functional Classification for Artifacts from 19th and 20th Century Historical Sites. *North American Archaeologist*, 2(3): 251-261.

Toulouse, Julian Harrison
1971 *Bottle Makers and Their Marks*. New York: Nelson.

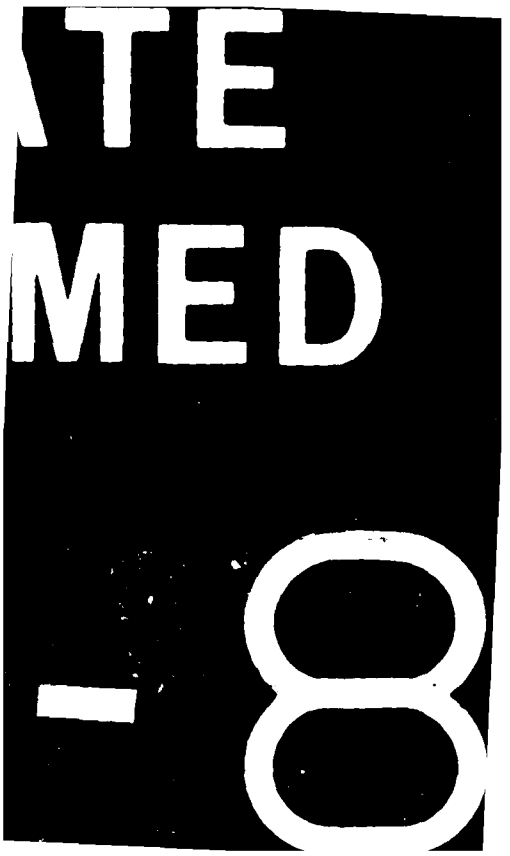
Warp, Harold
1978 *A History of Man's Progress*. Minden, Nebraska: Harold Warp Pioneer Village.

Wheeler, Keith
1973 *The Railroaders*. New York: Time-Life Books.

Wilson, Bill, and Betty Wilson
1968 *Spirits Bottles of the Old West*. Amador City, California: Antique and Hobby Publishing Co.

1969 *Western Bitters*. Salem, Oregon: Old Time Bottle Publishing Co.

Zumwalt, Betty
1980 *Ketchup Pickles Sauces: 19th Century Food in Glass*. Fulton, California: Mark West Publishers.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